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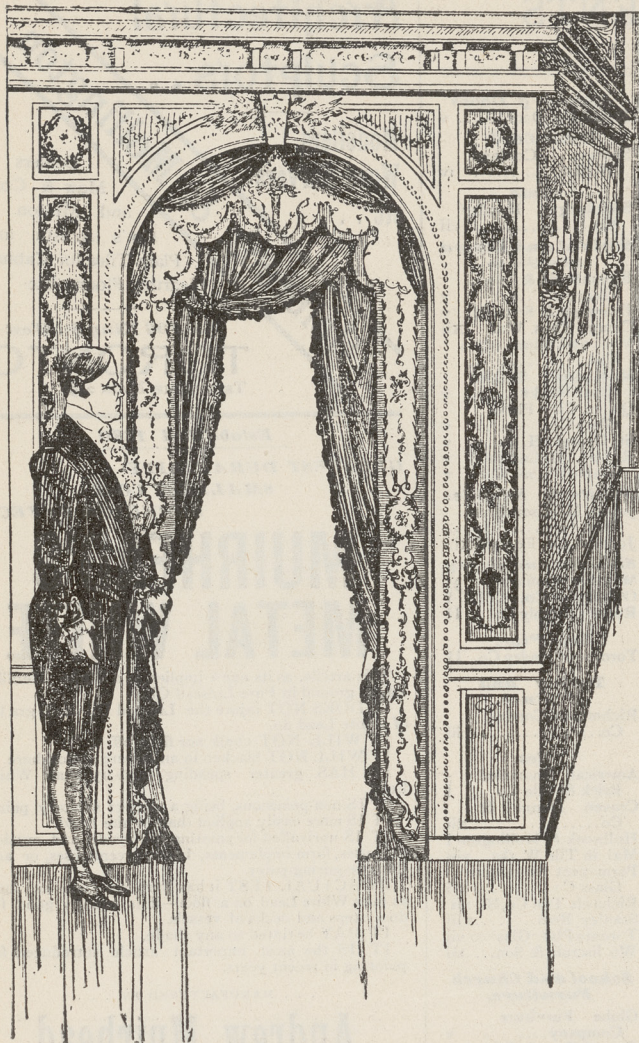
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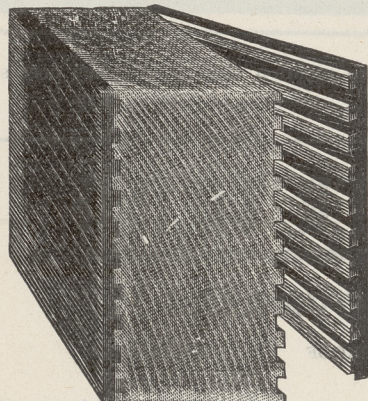
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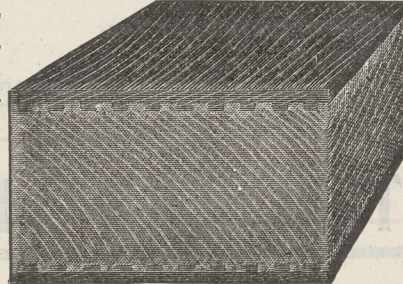
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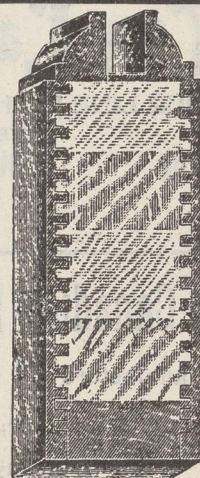
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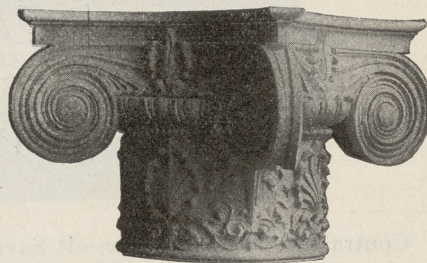
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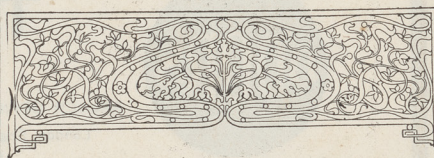
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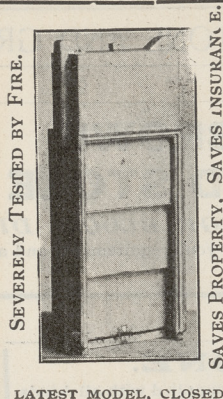
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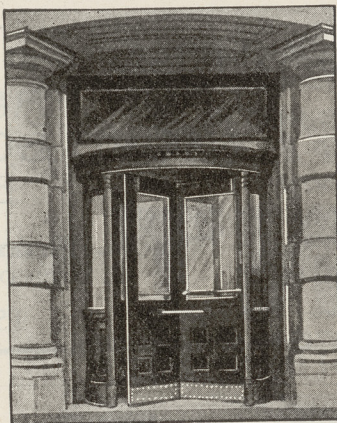
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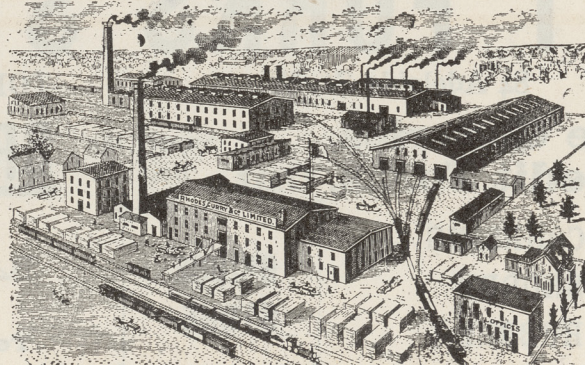
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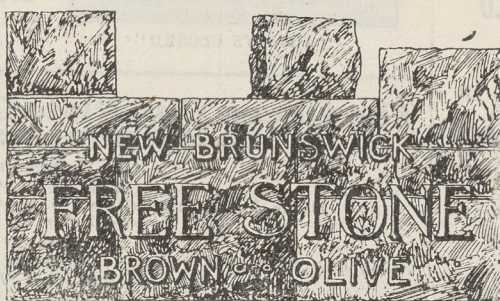
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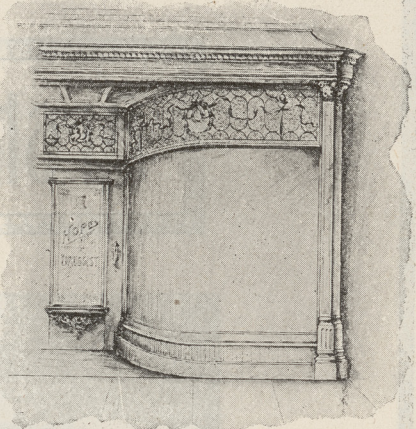
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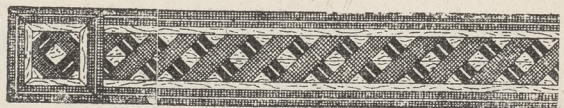
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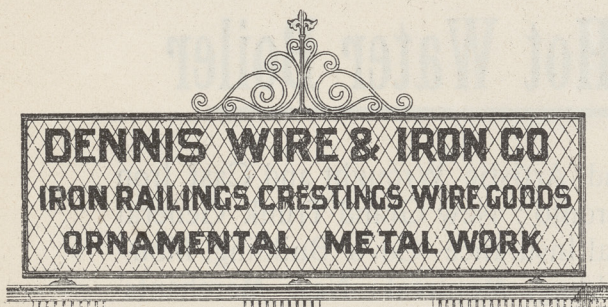
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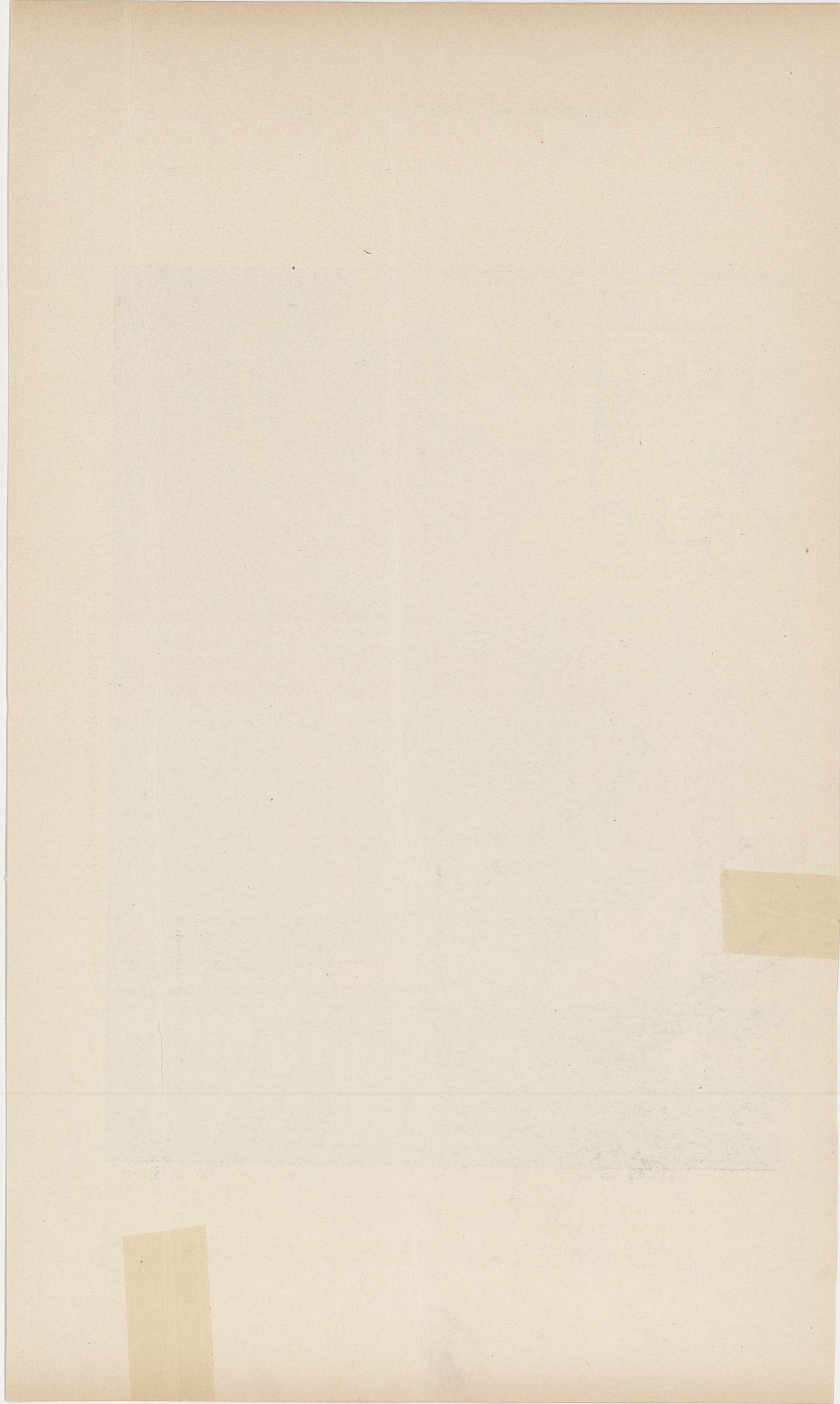
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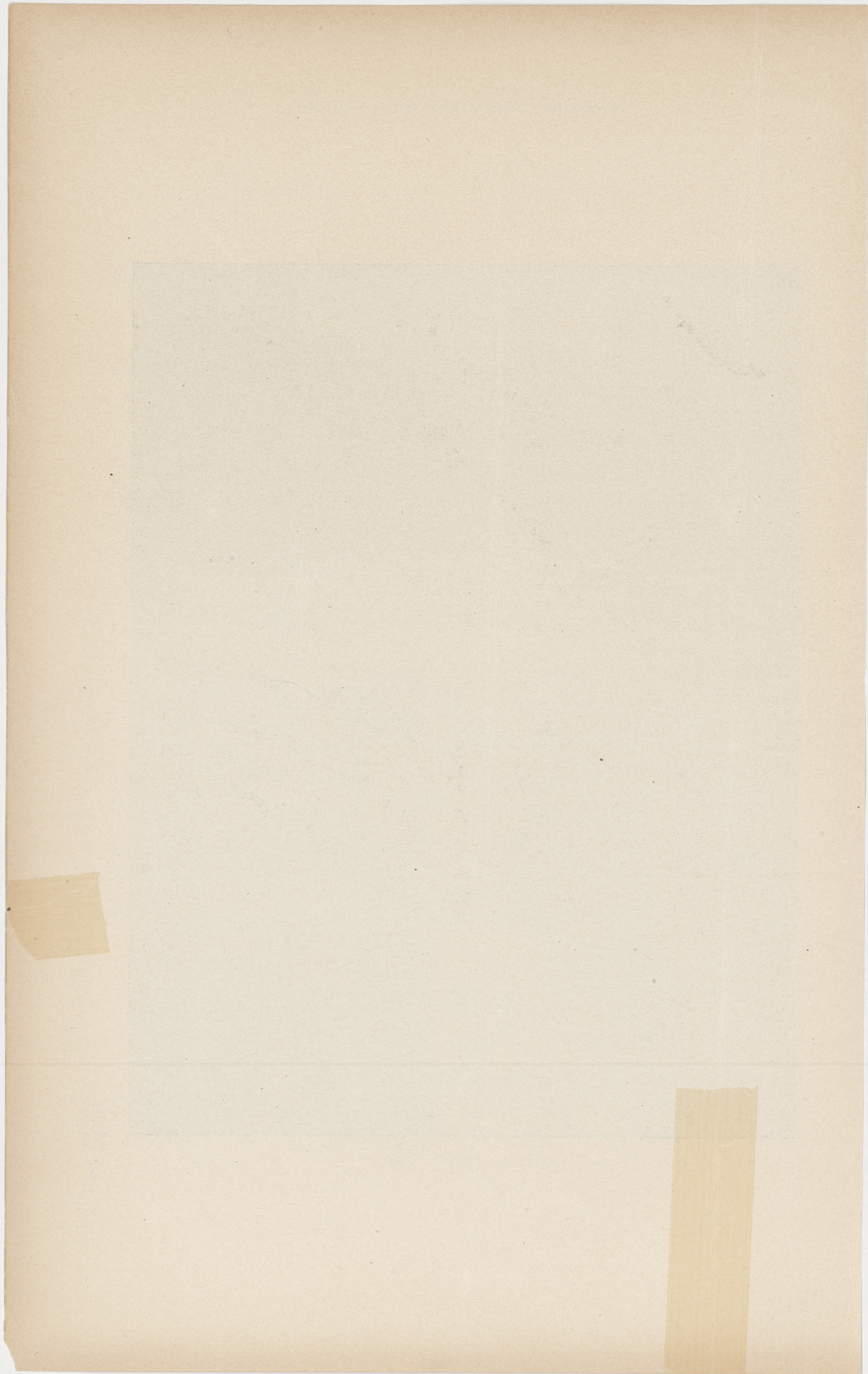


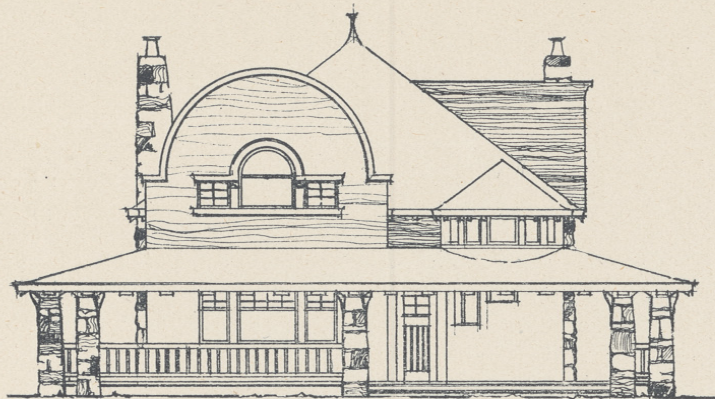
CANADIAN ARCHITECT AND BUILDER.

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
FEBRUARY, 1908

DRAWING ROOM IN HOUSE IN CRESCENT ROAD, ROSEDALE, TORONTO.

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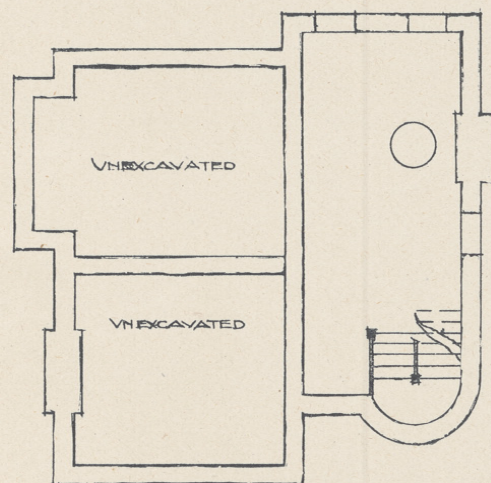




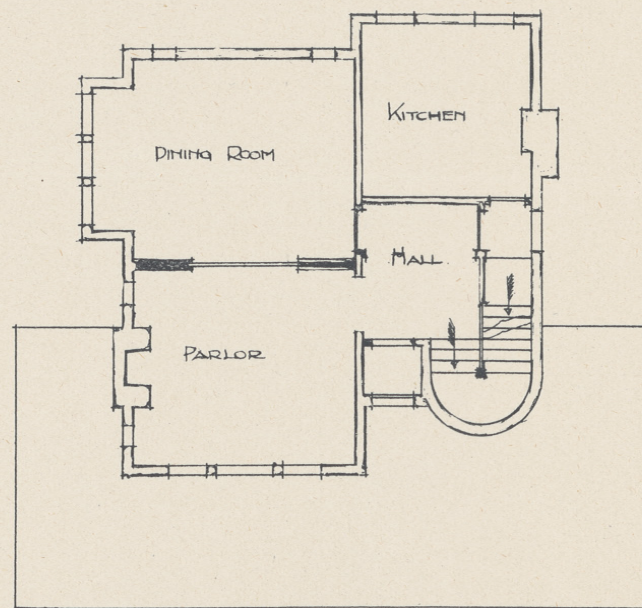
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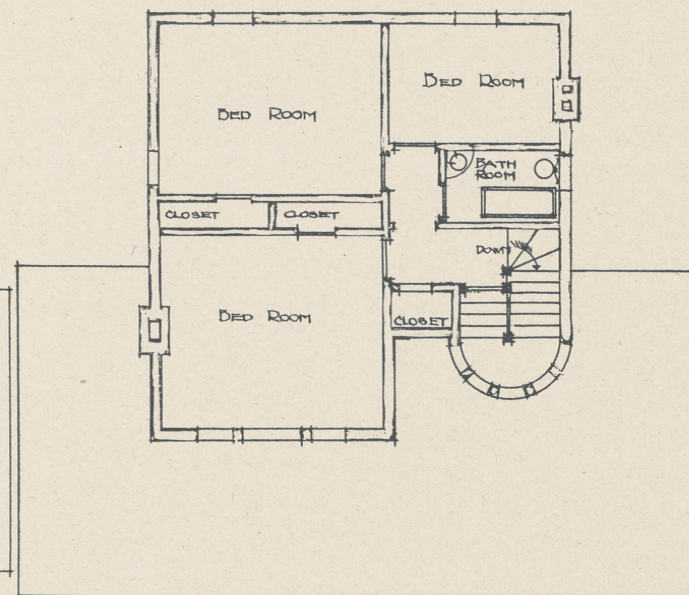
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BASEMENT



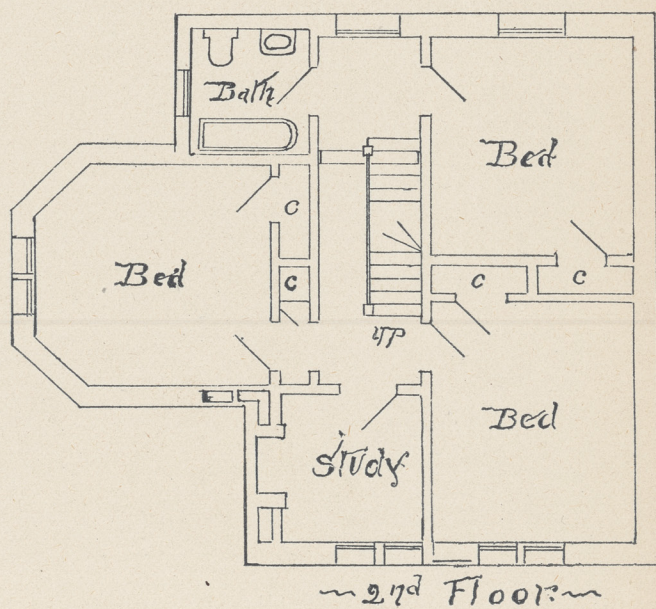
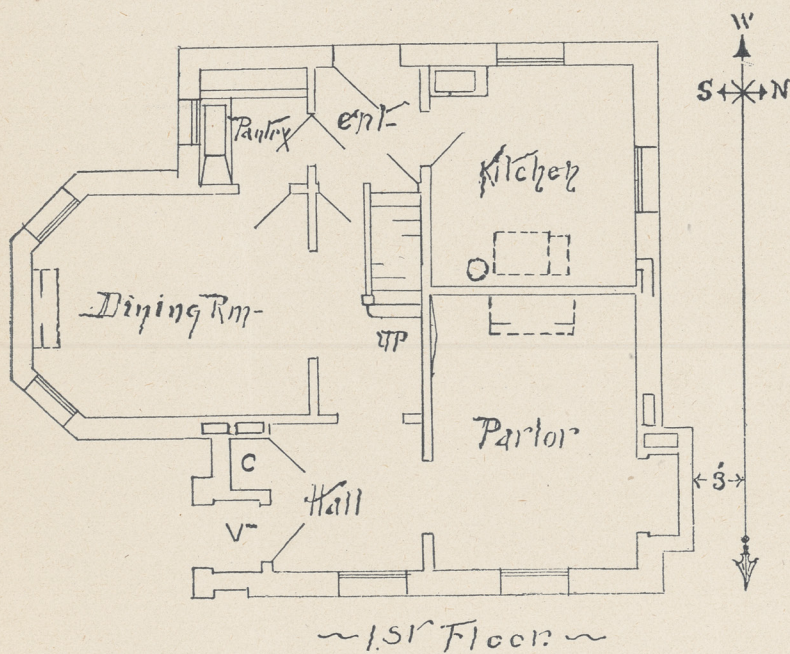
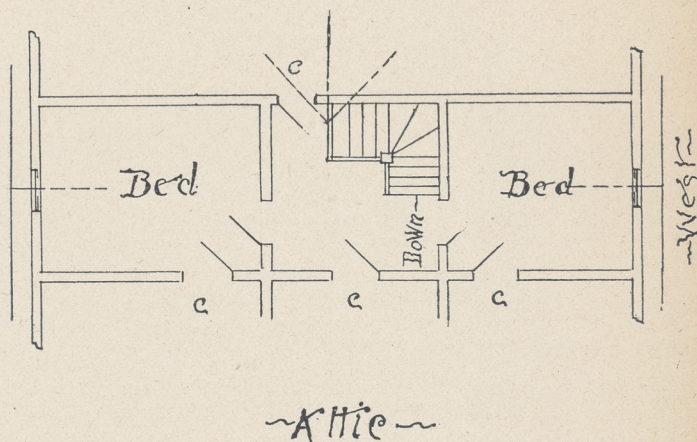
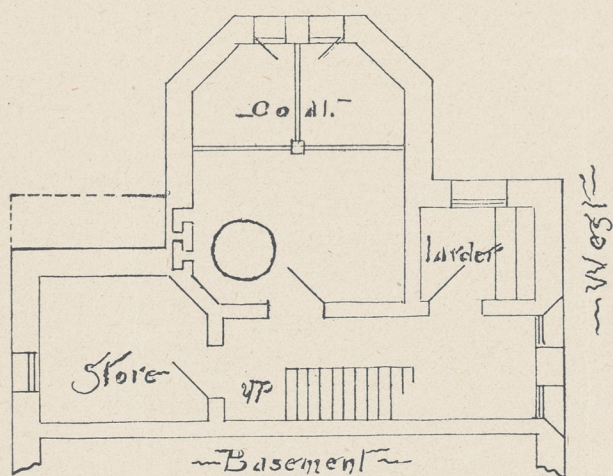
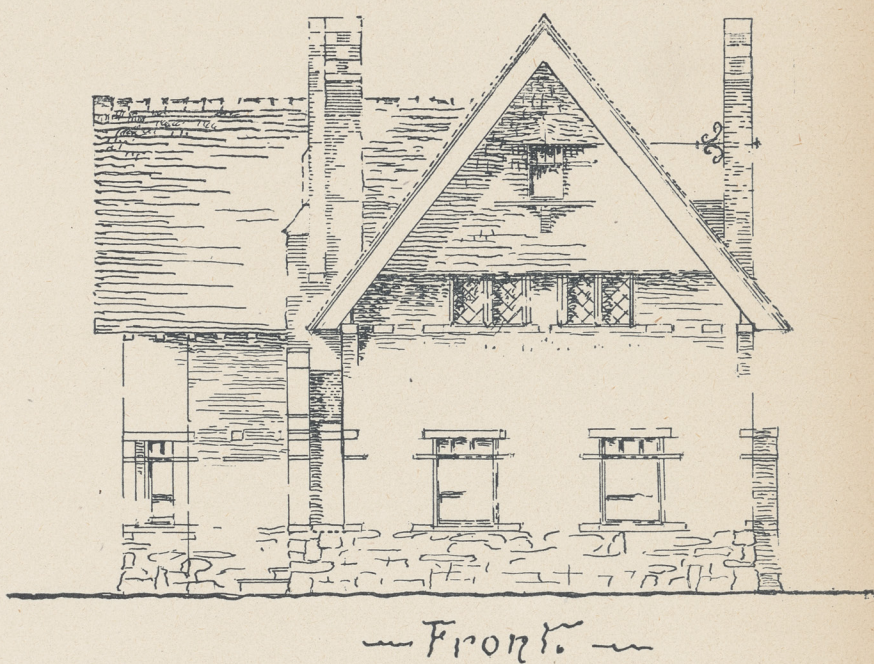
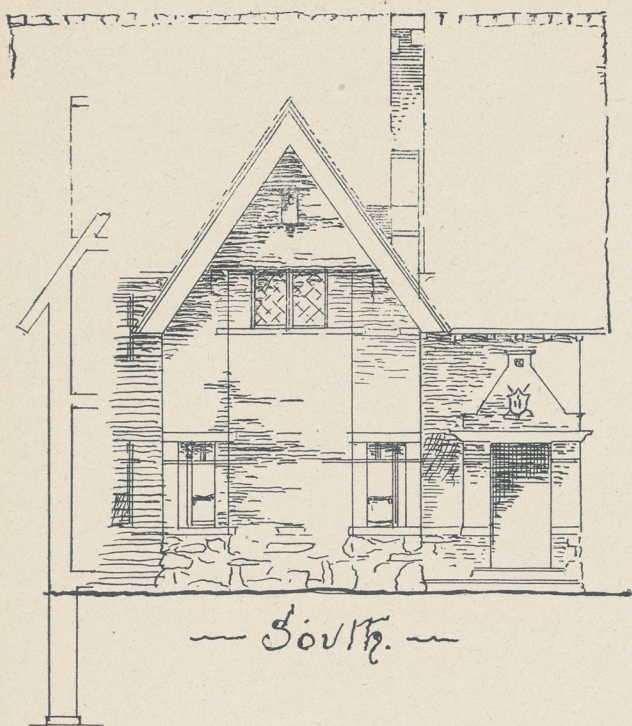
GROUND FLOOR



1ST FLOOR

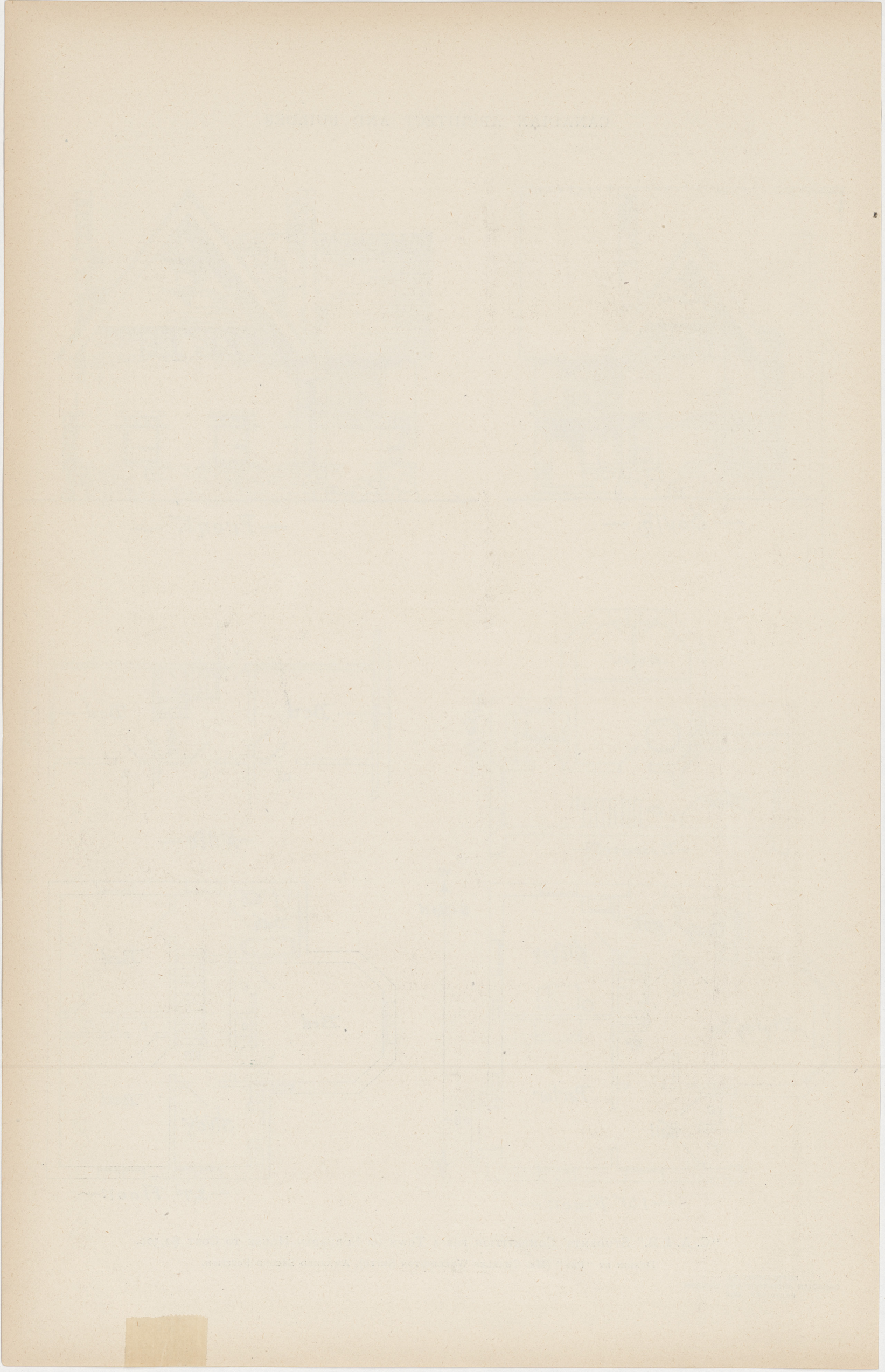
"C. A. & B." STUDENTS' COMPETITION FOR A TOWN OR SUBURBAN HOUSE TO COST \$2,500.

DESIGN BY "CANADA" (MR. A. A. KING), AWARDED FIRST POSITION.



"C. A. & B." STUDENTS' COMPETITION FOR A TOWN OR SUBURBAN HOUSE TO COST \$2,500.

DESIGN BY "PEN" (MR. CHARLES WELLINGTON SMITH), AWARDED SECOND POSITION.



The Canadian Architect and Builder

VOL. XVI.—No. 182.

FEBRUARY, 1903.

ILLUSTRATIONS ON SHEETS.

House in Crescent Road, Rosedale, Toronto.—Gordon & Helliwell, Architects.
C. A. & B. Students' Competition for a Town or Suburban House.—Designs awarded First and Second positions, by "Canada" (Mr. A. A. King, Montreal), and "Pen" (Charles Wellington Smith, Toronto Junction, Ont.)

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Photogravure Plate—All Saints' Church, Dorchester, Mass.—Cram, Goodhue & Ferguson, Architects.
Photogravure Plate—The Benedicts of Beuron.—Friar Bonaventure and Friar Paulus.

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Sewage Disposal in Toronto.

The Toronto City Council have shown good sense by throwing out the recommendation of the Board of Control that the citizens should be asked to express by ballot their approval or disapproval of the proposal to install the septic tank system for the disposal of sewage. The City Engineer was sent to England last year to investigate sewage disposal methods. He has presented his report. If the Council have confidence in him they should act on his recommendations. If they have not full confidence in his judgment on this particular matter, let them appoint an expert to advise and act with him. What can the average citizen be expected to know about the merits or demerits of particular methods of sewage disposal for a large city? Let the Council and their officials deal with the problem and assume full responsibility for the resulting success or failure.

A Carnegie Library for Toronto.

The offer of \$350,000 to Toronto with which to build a Public Library has brought on an acute attack of public debating upon the subject of Mr. Carnegie's grants. We can sympathize with the point of view of every one without seeing that it becomes the duty of the City Council to attitudinize in support of it or of any view but its own or what should be its own—whether or not it is for the interest of the citizens, as regards the question of having and maintaining a public library, to accept this grant and its conditions. Col.

Denison may object to the intrusion of Americano-Scotchmen in the affairs of Canada; there is something noble and inspiring about this gentleman's stout Canadianism. Mr. E. R. Osler may consider Mr. Carnegie's offer impertinent; we are glad to have Mr. Osler take this stand, for it is certainly pertinent that the exceptionally wealthy should begin in Toronto that practice of endowing public institutions which is doing so much good in the cities of the United States; and Mr. Osler, who is liberal himself, is just the man to introduce into wealthy circles in Toronto the idea that one of the privileges of wealth is the endowment of beneficent and educational institutions. The Toronto District Labour Council may "protest against the acceptance of any alms or contribution . . . as an easement to the conscience of this man . . . who imported into the Town of Homestead a gang of sluggers, known as United States deputy marshals, whose presence resulted in the loss of life of our brother workers"—who were out on strike in July, 1892. This too is an interesting demonstration, marking the progress of thought in these matters; but it is not the function of the City Council to discuss Mr. Carnegie's wealth, only the portion of it which he offers for their use:—whether it is enough for the purpose and whether the accompanying obligation is too great to undertake as a consequence of acceptance.

The interesting questions really are whether the money—from which a large subtraction must be made

for building a branch library—is enough; and where the building should be placed. The money is certainly enough to make any addition to it a light matter and the pertinent question for the City Council seems to be whether they would rather provide the whole amount or the small part that it may be necessary to raise to supplement Mr. Carnegie's grant. It is only a library that is wanted. It is not necessary to aim at the general purpose arrangement which spoils so many libraries and adds unnecessarily to their cost—combining an art gallery, museum, etc. The project of an art gallery has already been under consideration in private circles and there is some prospect of its being built under auspices that will insure its being a good thing.

As to the question of site—it seems obvious that the central public library should be down town, where most of the population collects during the day. Between those who work daily in the city and those who come in to shop, to attend the theatre matinee, etc., the city proper is frequented, during a week, by nearly the whole population, and there is no other part which is. People live at opposite ends of the city and pass through the central part on the fly on their way to and from the business part, what we have called the city proper, or what is usually called "town." It is in town therefore that the central public library should be placed; for it is only there that the business part of the population, who work in town from early to late, would have a chance to visit it at all; and it is only there that the part of the population, whose daily occupation is domestic, could include the public library in their town round instead of being obliged to make a special visit to it at the cost of more time and an extra street car fare.

If the building is to be down town the site does not seem difficult to choose. There is plenty of room vis-a-vis of the City Hall, and the buildings to be removed are unimportant; the situation is probably the most convenient that could be chosen, and the conjunction with the City Hall, like the conjunction of a planet with the moon, will give greater importance to each. It is a pity that the site adjacent to the City Hall on the north side of the street has been occupied by a private building. Here, in the sunlight, where its retirement from the road would have increased the space about the City Hall, was the site for another public building; but there is a sunlit corner still available on the east side of Bay street, and there the Public Library should be placed.

OFFICE MANAGEMENT.

(Concluded.)

MEMO RECORD—The satisfaction of getting notes down in writing is apt to be delusive unless there is a certainty of the notes being forthcoming when wanted. A scribble book for all notes, dated at the beginning of every day, does very well in a small office, but as soon as the office rises above one man power and there must be more than one scribble book, it becomes evident again that the only way to provide for expansion is to keep everything together that refers to each piece of work. In the case of notes of all kinds the simplest plan is to keep a scrap book for each job into which shall be pasted every note that is made in connection with it. A standard size of note pad, distributed through the office and ready to every one's hand, will produce neater and more orderly results. Should a client come in with instructions the first thing is to

date a sheet of the scribble pad. When he is gone the notes should be pasted in at once, both for security and also to keep everything in order of date.

CALL BOOK.—The office boy should keep a book on his desk in which to enter under date the name of every one who calls on business of the office and whom he saw. The time of coming and going should be entered. In the case of a client it may be useful to exhibit in support of an account a statement of the number of hours of office time consumed in interviews.

EXTRAS.—Here is a great centre of trouble in building, not always on account of the amount of the extras so much as because they are un-

expected or incurred without permission. It seems to be commonly held among architects that extras should be kept in the background as long as possible. If this is intended to further the maintenance of smooth relations with the client as long as possible, it is a mistake, ministering only to a deceitful smoothness which must react upon the architect's mind and effectually destroy the frankness that ought to be the essential condition of his dealings with his client. If a statement of extras is delayed in the hope of reducing them in some way before the day of settlement, the path is made easy for temptation to juggle with the extras and the contract to drop some item of the contract in payment of extras, or to substitute a cheaper material for a dearer, and set off the amount of the difference against the extra account before making the statement of extras. Either of these methods of reducing the extra bill may be a judicious decision, and cheerfully accepted by the owner; but to make them without his knowledge is an act which bears a strong symptomatic resemblance to dishonesty; for the contract which the owner has



MR. WILLIAM L. SYMONS,
President Ontario Association of Architects, 1903.

accepted states the work which he has a right to expect unless he agrees to deduction from it.

The wisest plan is to keep the statement of extras as far as possible abreast of the progress certificates. For this purpose as well as to avoid disputes it is well to settle the amount of the extra, as far as possible, when it is ordered, and to give all orders for extras in writing stating the estimated cost. For this purpose a form is necessary, printed with headings for the building number, order number, date, contract, description of work to be done (with plenty of space left for this) the cost, and signatures of contractor, owner and architect. The form should be issued in triplicate, and it would be best to have it in book form with one stub for each three blanks. If there is to be but one writing with carbon paper between the blanks, this would require a page with three divisions perforated between and printed alternately on the front and back of the page, so that the printed surface of all three may face upwards when they are folded for reduplicate writing. The three blanks should have "owners' copy," "contractor's copy," "architect's copy" printed across the face.

CONTRACTS.—The contract should be made out in triplicate; a copy each for owner, contractor and architect, and the office copy should have attached to it the tender and memoranda to show how the contract sum was made up.

A set of blue prints, as less susceptible of alteration, is usually set aside for the signed contract drawings. Subsequent alterations may be then made on the tracings and should always be dated. A print of each alteration may be made.

CERTIFICATES AND THEIR RECORD.—The certificate form should have headings on the stub for a full statement of the progress of the account and these should be repeated on the certificate. The items should run: Contract amount, extras, total, deductions, net total, (thus taking account of extras and deductions to date of issue of certificate) former certificates, this certificate, drawback, total, and balance on hand (when total of certificates and drawback is subtracted from the net total above.) The drawback and balance do not seem to be inserted in the American certificate. The building number and progress and trade numbers of certificate should be given and the date; the name and address of the owner or his agent to whom the certificate is addressed and the contractor's name. All information on the face of the certificate should be entered on the stub. It seems to be usual in American offices, to have only a brief note of number, date, amount and contractor on the stub, but to keep a letter press copy of the certificate, and the form is sometimes printed in aniline ink for the purpose.

Frank Miles Day & Bros. print on their certificates the following excellent notice:—

"On making this payment the owner should assure himself that his interests are protected by insurance sufficient to cover his liability in the increased amount resulting from this payment."

This notice is supplemented by a note to the same effect, on a form added to the certificate with a perforated attachment. It reads thus (after number, date and address):—

"We have this day issued to.....a certificate of payment on account of.....contract for work on your.....We call your attention to the insurance clause of your contract and to the notice as to insurance on the certificate.

Yours Truly

For the record of certificates and contract accounts, the writer in the The Brickbuilder recommends a folder for each contract. Copies of contracts, orders and accepted estimates are kept together in the respective folders. These documents are apparently fastened on the inside. The record of accounts are made on the outside and are displayed at one opening, thus:—The sheet, which is in the proportion of 3 long to 4 wide, is folded vertically in three; the middle division which is to be exposed, is titled with the building number, the contract, contractor's address, etc., the side divisions have recorded on one the certificates issued, with columns for date, amount and total to date, on the other a statement of deductions and extras in four columns under four headings, viz., date, order number, deduction, extra. The deductions and extras in parallel columns show at once the progress of the extra account. The bunch of folders having to do with one building are kept together in a special file. As an assistance to picking out the right folder with ease, the tail of the outside fold may have printed on it a list of all trades, and the trade accounted for by each particular folder may be underlined.

It is worth notice also, in pursuance of the idea that printed headings for everything that should be filled in are a necessary guide to prompt the memory of office subordinates as to method and ensure orderly work, that across the head of the exposed surface of the contract folder is printed "file herein contracts, accepted bids and orders."

SUPERINTENDENCE REPORTS.—In a large office where superintendence is done by an outside man or a draughtsman, a form of superintendent's report is essential, but even when a principal oversees the work, it is desirable to keep a record of progress, and to keep a reminder of work not done according to contract that it may not be lost sight of until corrected. The form in use by A. J. Manning serves both as an instruction to an unskilled superintendent and as a reminder to an experienced man. It has the following heads with space sufficient after each for the sort of note that follows:—

"Weather conditions....How much time lost owing to bad weather....Number of men at work....What doing....Work done since last report....Work not according to contract....Defective work formerly reported made good and how....Materials delivered since last report....Materials wanted on the work now....Materials not on the ground that will be required two weeks hence....Mechanics wanted on the work....Mechanics that will be needed two weeks from this inspection....If work is delayed or will be delayed for want of materials, details or other reason, state for what, and include any remarks not covered by above inquiries"....

If this form or one to the same purpose is filled in periodically the work is not only more methodically looked after but there is a continuous record on file of the progress of the work.

WORK SLIP.—A convenient device to keep work moving with little personal oversight is the workslip. The following heads for entry are taken from a slip in use in the office of George B. Post. After the building heading and slip number are as follows:

"Title of work....Origin and date....Drawings ready....Drawings submitted....Drawings approved....Specification ready....Contractors affected....Estimate invited....Estimate ready....Estimate Submitted....Work authorized....Contract awarded or orders issued"....

When the last item is dated the slip may be filed away. The "origin" may be the Memo Record, the authorization a letter. A rubber stamp for such constant authorities will be found useful; in particular a rubber stamp, lettered "vide letter....19....," will be found of great service for marking, authorization or directions on drawings, records, reports, work slips, etc.

"C. A. & B." STUDENTS' COMPETITION.

The committee of award in the CANADIAN ARCHITECT AND BUILDER'S Students' Competition for a \$2,500 town or suburban house, have awarded first place to the design by "Canada," second place to the design by "Pen," third place to the design by "Mayfield," and honorable mention to the design by "T Square, Jr." The judges submit as a part of their report the following criticisms of the several drawings:

"CANADA" (design placed first)—The front would be much improved by designing the main gable more in scale with the rest of the work. The designer has not sufficiently studied the effect of the lines of the semi-circular gable above the rafter lines of the roof. The effect in execution would be even more clumsy than on the drawing.

In regard to the plan, pantry accommodation should have been provided and connection from the kitchen to the dining room without having to go through the main hall. The bathroom is too small. The subdividing of the basement should have been shown.

"PEN" (design placed second) has won his position in this competition not so much by what he actually presents as by the possibilities of his design.

In the first place the drafting is very incomplete, particularly in the planning; while the lettering is unnecessarily large and very ragged.

He certainly should have indicated more clearly than he does the steps approaching the entrances; also the wall section on the front elevation is entirely out of place, hindering the completion of the side elevation of the dining room extension, which is far more important than the wall section.

In the plan there seems no reason why the staircase hall should be shut off from the entry hall in the manner it is; nor why the bed room over the dining room should be practically entered through a closet.

The stairs would have extremely high risers indeed to reach the first floor in the space allotted to them, but however there is no doubt space enough in the hall to permit of them being made adequate.

The principal charm of "Pen's" design is the quiet and thoroughly domesticated character of the elevations, which are rather weakly rendered, but are entirely free from over-strained or exotic features, and had it been more carefully worked out in plan and also more carefully rendered in elevation, it would have been more worthy of the design, which is quite charming and capable of being put into very effective shape.

MAYFIELD (placed third).—This design shows a large amount of restraint, is simple in plan and the draughtsmanship is good. As regards the plan, the direct entrance to both the dining room and hall from the kitchen would be undesirable. This could have been obviated by moving the kitchen more to the north, and by placing a pantry and small hallway on the south side of kitchen, the pantry to project over dining room with serving door on west side of dining room. The servants' room would then be reduced in size but with closet in north west corner it would be ample. It might be said that most clients would object to a servants' bedroom opening off the kitchen. In the ground floor a door should connect the dining room and front hall. The exterior design while plain, is original in conception. The barge board seems a little heavy and the method of projecting the ridge board is hardly commendable.

"T SQUARE JR." (Honorable mention)—This design calls for great commendation, but is open to the insurmountable objection that the cost would far exceed the amount allotted, and so was ruled out of consideration as a prize winner.

The ground floor plan is excellent, and the Pergola introduced is at once unusual and suitable.

In the first floor the objection to be noted is that inferior rooms such as w.c., linen closet and cupboards, in addition to the bathroom, take up the south front of the house, while a bed room is placed facing north.

The elevations are extremely well handled, both as to design and rendering. The general composition is

good, materials properly used, and the character is both reserved and interesting.

The details submitted show careful study and skill in obtaining a good result by simple means.

"UTILITY."—This design shows careful study and aptitude in planning, design and rendering, but, as in the case with "T Square Jr.," the cost would far exceed the stipulated amount.

One feels in regard to the ground floor that more advantage might have been taken of the south aspect.

In the first floor plan the exposure has been more considered, and altogether the arrangement is good.

The elevations are well rendered and the design on the whole is satisfactory, although better results would have been obtained if more distinct character had been aimed at.

"BOBS."—This design could not be built for the amount stipulated in the conditions.

For the size of the rooms the hall area is too great and there is much waste of space on the first floor wing, the bath-room being unnecessarily large and the bedroom cupboard out of proportion to the size of the room, and the linen closet inconveniently arranged off the bathroom.

The main outlines of the elevations are good. Much of the effect thus gained has been lost in striving after effect by detail, as for instance, in the chimneys.

The verandah is especially weak in design.

The interior details are good. The design for the front entrance door is bad.

"MULTUM IN PARVO."—The plan and elevations on the whole are good but commonplace. There has been too much striving for effect in the main hall, ground floor. If more room could not have been obtained it would have been better to omit the fireplace and to have formed a vestibule, doing away with useless small closets, and possibly the beams and column. The plans and perspective are neatly executed.

"CYMA"—The author of this design has evidently made a conscientious effort to plan an everyday house to suit the average householder—but a greater effort might have been made to improve upon the ordinary run. The position of the pantry between the kitchen and front hall is objectionable and it would have been better to have used this space for a back hall and rear staircase, placing the pantry and a cupboard on the south side of kitchen. Upstairs, such an arrangement would allow the bathroom to be put on the north-west corner, with better light. The stairs to attic as shown, over rear stairs, give little headroom, a matter of vital importance in planning. The alcoves off the parlour and main bed-room might be made pleasing features, but the proportions of these rooms are not of the best. The single sliding door between parlour and dining room is too large for practical purposes. As regards the exterior, the gable over the square bay requires support at north-east corner for appearance sake and the pediments of verandah roof are unsatisfactory without breaks in cornice line to give them a meaning. For the front door and side light a more symmetrical arrangement would have been desirable.

"IF"—This design shows a plan of a character well suited for a suburban or town house, but a vestibule is an essential in a climate like ours, for which it is assumed the house is intended, and this could easily be arranged. In the dining room the fireplace might have been omitted and the space provided for a sideboard. The first floor plan is good but would have been improved, if at least two of the bedrooms opened off the front hall. The perspective drawing is certainly distorted and hardly gives the correct impression. The large gable in front and short ridge from front to back would look out of proportion if correctly drawn and it would have been better to have omitted the more easterly of the two gables on the north side. The finish of octagonal bay, etc., under the overhanging part of first floor as shown looks crude. On the whole with a little more study of the elevations a much more satisfactory design might have been evolved. The two mantels shown are rather weak as to design, and the

drawing does not give a proper indication of the material or construction. The draughtsmanship generally is commendable and the lettering is neat excepting in the floor plans.

"MAPLE."—The plan of this house is one of the best, being compact with space well utilized and careful attention given to the disposition of rooms, aspect, etc. The dining room with eastern exposure is well placed and the finishing of the first floor hall in bay to the west is satisfactory, thus allowing space for two good bedrooms to the front. The cutting of the corner of the south east bedroom might have been avoided, as it is almost always an undesirable feature in a room. The exterior massing is good, but the detail is somewhat mechanical. The two small circular bays to the south are rather trivial and the half timbered spandril over verandah, finishing against the brick wall is a feature which would be unsatisfactory in execution.

(Signed),

W. L. SYMONS	} Committee
A. F. WICKSON	
WM. RAE	
J. P. HYNES	
A. H. GREGG	

[NOTE.—The names and addresses of the successful competitors are as follows:—"Canada" (awarded first position) Mr. A. A. King, 73 McGill College Avenue, Montreal; "Pen" (awarded second position) Mr. Charles Wellington Smith, Jane Street, Toronto Junction, Ont.; "Mayfield" (awarded third position) Mr. George C. Egg, 24 Tupper Street, Montreal; "T Square Jr." (honorable mention) Clarence Thetford, with Messrs Darling & Pearson, Imperial Bank Building, Toronto.—EDITOR C. A. & B.]

MATERIALS, METHODS AND TERMS USED IN PLASTERING.

At the request of the Toronto Chapter of the Ontario Association of Architects, Mr. W. J. Hynes, on behalf of the Plasterers' Section of the Toronto Builders' Exchange, has prepared and submitted the following description of materials, methods, tools and trade definitions used in plastering, the object being to assist in bringing into use specifications that shall be more nearly uniform than those heretofore employed:

DESCRIPTION OF MATERIALS USED IN PLASTERING.

1. No. 1 WOOD LATH consists of white pine, cedar or spruce, free from large knots or bark, $\frac{3}{8}$ " thick, 4 feet long, in widths of 1", $1\frac{1}{4}$ " and $1\frac{3}{8}$ ", of uniform dimensions.

2. No. 2 WOOD LATH consists of hemlock, hard pine and culls from white pine, cedar or spruce, of irregular dimensions.

3. EXPANDED METAL LATH made from sheet steel, cut and expanded, may be procured either in the naked steel or painted. The Expanded Metal Company, of Toronto, manufacturers.

4. HAYES' METAL LATHING is made from sheet steel which is perforated, with the points of perforations turned back to form keys. Manufactured by the Metallic Roofing Co., Toronto, either plain or painted.

For either metal lathing the bearings require to be not more than 12" centres.

5. GREY LIME from Georgetown, Limehouse and Milton is generally used for mortar for the under coats in plastering. It should be well burned and used while fresh.

6. WHITE LIME from Guelph, Galt, Innerkip and other places is used for the finishing coat. Like the grey lime it requires to be well burned and should be made into lime putty while fresh.

7. WHITE ROCK FINISH, a new preparation on the market appeals strongly for consideration, from the fact of its being scientifically ground, and slacked with only sufficient water to complete the slacking, leaving the product in the form of dry powder which can be conveniently handled and used same as lime putty. Manufactured by the Imperial Plaster Co., Toronto. To be used according to the directions of manufacturers.

8. PLASTER—Made from Gypsum requires to be fine-

ly ground and properly calcined. Should be white in color, and of uniform setting properties. Our market is chiefly supplied by the Albert Manufacturing Co., of Hillsborough, N. B.

9. SAND for lime mortar should be sharp and clean but not too coarse; for cement work, coarse sand is best.

10. HAIR should be long winter cattle or goat hair properly saved.

11. FIBRES have been offered as substitutes for hair, but nothing at present offered answers the purpose.

12. NAILS for wood lathing $1\frac{1}{8}$ " long, of good weight and head. For expanded metal large-headed slater's nails. For Hayes' lathing heavy lath of good head.

13. METAL ANGLES. Hoidge metal angles patented and manufactured here are a good protection for external angles.

14. HAIR MORTAR consists of grey lime properly slacked and mixed with clean sharp sand, to which is added sufficient hair to hold the material from falling or wasting through keys of lathwork.

15. STRAIGHTENING MORTAR made same as above with a greater quantity of sand and one third the quantity of hair.

16. COARSE STUCCO made from grey lime, or white, as desired, with clean coarse sand.

17. FINE STUCCO made from lime putty or white rock finish, mixed generally one of lime to three of clean sharp sand.

18. LIME PUTTY made from white lime slacked with a surplus of water, run through a fine sieve, and allowed to stand in vats until fit for use.

19. GAUGING is the term used to describe the admixture of calcined plaster with mortar or lime putty. The larger the proportion of plaster used the stronger the work will be. The same term is used to describe the mixing of cements with mortar, sand, lime or other material.

20. PORTLAND CEMENT gauged with lime mortar is used generally for outside work and first coat on lath work, the proportion varying according to requirements.

21. PORTLAND CEMENT STUCCO generally used for outside work and places subject to damp or moisture. When applied on lath, use one of Portland, three of sand, and add one of hair mortar. Second coat, three of sand, one of Portland, and finishing coat generally two of Portland to five of sharp sand. When used on lathing, metal lath is to be preferred.

22. PORTLAND CEMENT WORK is generally conceded to be the best base coating for Keene's or white cements.

23. KEENE'S, PARIAN, MARTIN'S generally described as "white cements," were originally patented. The base of all is gypsum mixed with alum or borax and recalcined and ground. English Keene's cement is generally made in three grades—coarse, fine and superfine—the first of a pink shade and the latter pure white.

24. FOR BASE COATS Portland cement work is generally used, but many manufacturers advocate the use of coarse Keene's and sand. This method requires that the heads of all lath nails and exposed metal work be well shellacked to avoid rust. For first coat use two coarse Keene's, three sand. For second coat use one of coarse Keene's, one sand. Finish with neat cement.

25. VICTORIA KEENE'S CEMENT manufactured in England by Cafferata & Co. allows the use of lime in small proportions. This greatly reduces the cost, not so much in the material as in the ease and speed with which work may be executed.

26. BEST'S AMERICAN KEENE'S also uses this method for plastering.

In specifying these materials it is advisable to say they shall be used as directed by the manufacturers.

27. PATENT OR HARD PLASTERS are numerous. The base of nearly all is calcined plaster mixed with sand, cement, hair or fibre, and treated with a chemical retarder which delays setting and allows time for use. They are generally good, being machine made of ac-

curate proportions and furnished at building ready for use with the addition of water only. To save cost of transportation, some are delivered ready to use by mixing with sand and water. Owing to the increased cost of this material, thinner grounds are used.

28. WOOD FIBRE PLASTER made in Toronto by the Imperial Plaster Co. is the best and most general in use here. It is supplied ready for use by adding water only.

29. PARISTONE made by the Alabastine Co., Paris, Ont., is supplied without sand and contains no hair or fibre.

30. ROCK WALL PLASTER made by the Albert Manufacturing Co., Hillsborough, N.B., is supplied without sand.

It is advisable to specify these materials to be used as directed by the manufacturers.

31. PATENT OR HARD PLASTERS make only the base or rough coats. Good stucco or float finish work may be done with them but all depend upon lime putty or white rock finish for a trowelled coat.

33. BLACKBOARDS. — Potter's Blackboard Material made by the Soapstone Finish Co., Chester Depot, Vt., is generally used. Some contractors have their own compounds and methods. They should be black, hard, smooth, but free from shine or polish.

DESCRIPTION OF WORK DONE IN PLASTERING.

1. RENDERING is a good coat of hair mortar on brick or stone walls before lathing.

2. BACK PLASTERING is lathing and plastering with one good coat of hair mortar on any framework which may be required before regular lathing is done. Back plastering, when done between timbers, is a slow and expensive process. It is better to lath and plaster the timbers and re-strap lath and plaster, as this method gives complete separation of woodwork.

3. DEAFENING is a body of plastic material laid on boards fixed between joists of a floor, composed of lime screenings and cinder or ashes, or lime and mill shavings, about 2" thick. The use of cement in deafening is a detriment, as when made hard the deafening properties are destroyed.

4. WOOD LATHING should have joints broken every twelfth lath nailed 3-8" apart for ceiling work and $\frac{1}{4}$ " apart for wall work. Ends butted, no vertical lath allowed.

5. METAL LATH should have bearing, not exceeding 12" centres nailed on with flat headed nails for either metallic lath or expanded metal and if finishing coat is required must be specified "three coat work" as all metal lath must receive a scratch coat foundation for straightening. Arches, grains, or furring for heavy mouldings are best executed with metal lath.

6. ONE COAT WORK is one good coat of hair mortar or other plaster about $\frac{1}{4}$ " thick and floated to to an even surface.

7. TWO COAT WORK is one good coat of hair mortar straightened with a tool called a "darby" and floated. After this coat is dry apply putty coat of white lime and plaster with sand, if desired. The work cannot be made more than reasonably straight.

8. THREE COAT WORK is one good coat of hair mortar well scratched. Second coat of straightening mortar laid plumb and true. After this coat is dry apply coat of white lime and plaster with a mixture of sand, if desired and extra well trowelled or polished.

9. ROUGHCASTING is a good coat of hair mortar left from the "darby," and when dry slapdashed with a mixture of lime and clean fine gravel.

10. STUCCO—this term is used to describe plastering work finished with a wooden tool or float leaving a rough granular finish.

11. Rough or two coat stucco work consists of one coat of hair mortar well scratched and finished with coarse stucco applied when under coat is dry, straightened with a "darby" and brought to a rough uniform surface. This work cannot be expected to be more than reasonably straight.

12. Three coat stucco or float finish consists of one coat of hair mortar well scratched with a second coat

of straightening mortar laid plumb and true and finished with a coat of fine stucco properly floated to uniform granular surface.

13. BASTARD STUCCO consists of work executed as described for three coat work with the exception of the last coat being composed of two parts lime putty to three of sand laid true and floated to an even surface; this is then trowelled to a hard surface but the face is not made perfectly smooth.

14. TROWELLED STUCCO is same in material and method as bastard stucco, the difference being that it is trowelled until face is brought to a true smooth surface. In both bastard and trowelled stucco the under coats must be thoroughly dry; there being no plaster or cement used in this work the success depends upon proper and uniform suction.

15. DUBBING OUT is the term given for the necessary work in preparing the uneven surface of rough brickwork or fireproofing to allow of plastering. If done with mortar it will require that not more than $\frac{1}{2}$ " be put on at one time and may take several coatings to bring work to the proper surface. By using gauged mortar or hard plaster the necessary thickness may be applied at one operation.

16. PORTLAND CEMENT WORK requires same methods for stucco work as here described for mortar, the proportion of materials being as described in Materials, clauses 20 and 21.

17. TROWELLED PORTLAND CEMENT requires under coats, as described above, and is finished with two of Portland, one of fine, sharp sand, to which is added one twelfth of fine lime putty, laid even and trowelled to a fine polished surface.

18. KEENE'S CEMENT WORK may be finished as described for plastering work, the proportions being as described in Materials, clauses 23, 24, 25 and 26.

19. PLASTER MOULDINGS are formed with gauged mortar and finished with gauged putty. When weight of mouldings is not too great the mortar may be dispensed with. Owing to the danger from settlements and shrinkages the thickness of these mouldings should not exceed $1\frac{1}{2}$ " in any place. All heavier work requires to be bracketed.

20. KEENE'S CEMENT MOULDINGS are executed in neat Keene's cement, either coarse or superfine as may be desired, with a backing of coarse Keene's and sharp sand.

21. PLASTER CASTINGS are composed of plaster and cast from moulds required by the design or article to be duplicated.

22. STAFF CASTINGS are composed principally of plaster to which fibre or canvas has been added before the plaster has set. Their cost is no greater than for the plaster castings and they are much stronger allowing of very large work to be made in one piece. These casts may be sawn and fixed by nailing.

STAFF calls for special attention. There is no limit to its possibilities as a decorative material either in conjunction with run mouldings for enriched members or for the production of mouldings with enriched members and decorative features complete. By its use the entire decoration may be prepared while the building is in course of erection, ready to fix as soon as work is ready to receive it, in this way saving much valuable time. The manufacturers carry full stock of such ornaments as are in general demand but work to detail requires special models, for which due time should be allowed. Specifications should state whether work is to be from stock or specially modelled to detail.

23. WOOD FIBRE PLASTER or other hard plaster may be specified for any work where mortar is used for interior, as described in previous clauses. A great saving in time can be effected by its use, particularly in winter or damp weather.

24. TOOLS AND TERMS.—Scratching is the term used to describe the cross scoring of the first coat of mortar to form key for straightening coat or coarse stucco finish.

THE DARBY is a wooden tool about three feet long, 4" wide and $\frac{1}{2}$ " thick, with two handles by means of

which the first coat is two coat work, and stucco coat in two coat stucco is levelled or roughly straightened.

THE FLOAT is a wooden tool about 14" long, 4" wide and $\frac{3}{8}$ " thick, used after the "darby" and straightening rod to level out the work, also for finishing stucco work.

25. GROUNDS for plastering work should be of soft pine firmly nailed and made true and straight. The thickness of grounds determines the widths of frames and jambs and should be considered together. For brickwork or terra cotta the thickness here given is supposed to be fixed close to wall; if unduly packed out to straighten defective walls a dubbing out coat is necessary.

Two coat work in lime mortar on lath $\frac{3}{4}$ " grounds.
" " " " brick $\frac{3}{8}$ " "

Three coat work in lime mortar on lath $\frac{7}{8}$ " "
" " " " brick $\frac{5}{8}$ " "

Grounds for metal lathing $\frac{3}{4}$ ".

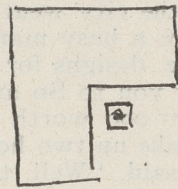
Two coat work hard plaster on lath $\frac{5}{8}$ " grounds.
" " " " brick $\frac{3}{8}$ " "

DESIGN.*

BY WILLIAM L. PRICE, Philadelphia.

Mr. President, brother architects, and friends of architecture. I have not any paper to offer you, just a few remarks that I am afraid will be rather rambling because I want to touch on a great many subjects; I want first to speak on the question of making the talk a practical talk. We have heard a great deal of discussion to-day at dinner and at other times about being practical but every time we try to be practical we turn to the ideal, because when we come to analyze what is ordinarily called the practical it is the transitory; it is the bread and butter that we eat, not for its own sake, but to make the man; the practical part of our work is only the mother of the ideal. Architecture could not exist, architects would be an absurdity if it were not that the ideal is after all the main object of mankind's search and endeavor. Now it so happens that architects are not only clothiers of mankind, but teachers of mankind, teachers for good or ill; teachers whether they want to be or no. Now I do not know of any royal road to the ideal, if I did I would not tell anybody about it, because the only thing that any man can get to help him towards the ideal comes from within and not from without. We spin our own cocoons (especially as architects) and it lies with us whether our cocoon shall be a monument or merely a sepulchre. And we must not compare those cocoons one with the other and say of this man that his cocoon is not as fine a monument as the other man's. Compare it with the man himself and ask, Did he build as well as he knew, or didn't he? That is the only question. If he built as well as he knew he couldn't help building to himself a monument and for the crowd a betterment. The architect's profession or art or whatever you choose to call it, is perhaps the most involved that there is. We have just been discussing a question of color decoration; the architect that does not consider the question of color in his buildings when he is designing his mouldings and ornaments is not designing at all. It is just as much an essential part of the design, the color of the walls or an approximate idea of the color of the walls as the moulding; they are there for the same reason, to give color effects, light and shade. One of our architects some years ago denounced American architecture as "an attempt to make something look like something else that would not be desirable if genuine." That is a pretty savage arraignment,

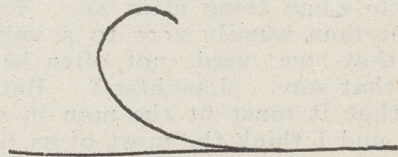
and it is perhaps not quite so true as it was; but still it is in a large measure the truth. When we build the big structures that we call buildings, office buildings or similar buildings (they are not buildings at all in the real sense, but are structures or erections), we clothe them carefully with building material, nine times out of ten, stick it on, bolt it on. There is a building in Philadelphia in which the granite corner piers, a perfect absurdity in itself, are apparently of solid blocks, carefully and painfully cut out in the form of an "I," allowing the column to stand within it in this fashion.



1

If that is not an attempt to make something look like something else that would not be desirable if it was genuine, I do not know what it is. It is a lie that works both ways; it hurts the community and it hurts the man who did it, and hurts him worst.

Much of what I am going to say may appear reactionary, but I want you to notice one thing, that the man lost in the wilderness (and we are just a little lost in the wilderness in art matters), if he has not some guiding point, will go around in a circle—at least I am so told. So while the line of progress may be something like that—an upward slope—we may be travelling



2

a line something like that, believing all the while that we are on an upward course.

And we must not measure the line by what we can see of it; we do not see enough to make one part of it look different from another part at any time. We have to consider a great many outside things; to look at history and experience, to the architect especially that is essential. There is only one thing worse, in my judgment, than ignoring precedent, and that is following it. (Applause and laughter.)

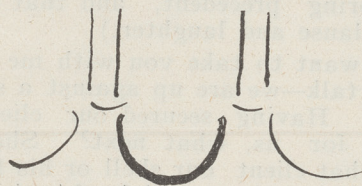
Now I want to take you with me in a little practical talk—we are up against a serious proposition. Having secured our client, the first question for us, what next? Shall we build around that client our shell or his fitting shell? Now when we stop to think of it, how often are we trying to build the best possible monument to ourselves and not the best possible house or building for that man?

During a first interview with a client a year or more ago, after talking to him about an hour, he said, I would like to see the house you would design for me, Mr. Price, and I said I would too. Being agreed on that he then said: "Now I have told you the things that I want, the size of the rooms and the number of them; you know

* Paper read at the annual convention of the Ontario Association of Architects held in Toronto January 13th and 14th, 1903.

the site, make me a sketch of the house you think will fit these requirements." I said, "Mr. —, I will gladly do that; I can do that, I think, but if you take that design and build it you will be a fool." And then I went on to say, "for I do not know you well enough to draw a house for you." I hadn't the slightest expectation that I would get that job, but right there I got it, because that man began to see something different in architecture from what he had ever seen before; he began to realize that this was to be his house, not an architect's house merely. Afterwards, sure enough, to show you how the good work took effect, one of the leading finishers of the city went to him and said, "Mr. —, you are a busy man, you don't want to bother with the designs for the inside of your house; I will refer you to So and So—we did the work for him—\$17,000 worth of interior work and we did not take up two hours of his time."

This gentleman said, "Well, that settles it, you could not decorate my house or do my interior woodwork because I can see that that is your interior woodwork and not his, it does not fit him." I simply tell you that to point out that what we have to do if we are going to have real architecture is to make our product more than beautiful, more than fitting to the situation, primarily fitting the man that is to live in it or the purpose for which it is to be used. That means a pretty savage thing sometimes; it means that if we are going to build a house for a vulgar man, that we must build a vulgar house. It wouldn't be architecture if we did not. It must be better than that man; it must be what that man might be, it must represent that, but unless it has in it some element of that thing which makes him the vulgar man, in my indement, it is not architecture at all, we are up against difficulties and limitations of that kind, and it does not seem to me to be such a bad thing after all. Fortunately the vulgar man usually goes to a vulgar architect, so that we need not often be seriously troubled that way. (Laughter.) But the fact remains that it must fit the man in some way or other, and I think the most of us (even if we do not analyze these questions of design) naturally tend to draw a vulgar house for a vulgar man. But we must be mighty careful of what we mean when we call a man vulgar. A difference in taste does not constitute vulgarity, or the reverse. People have come to me and said, "I like that house out on 49th street, in West Philadelphia, and that is the limit. I have been around your town a little, but there is nothing that I have seen here that approached 49th street; it is absolutely the limit." Most of the arches on the porches are wrong side up, thus:



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Nearly all of them. My client will say, "I like this or that house at 49th street." And instead of falling dead I go out and try to find what it is he likes about that house; very often it is a bay window on the side of it, or it faces this way or that way, or it has some other feature

absolutely irrespective of design or drawing that fits the man. If, for instance, you take a man that likes brilliant colors and set him down as being ignorant and vulgar, because you have put two things before him; one good, in low tones that you care for, and one bad in high colors that you loath and that attracts him because he loves color, you make a great mistake, for that is not a fair test; you ought to put before him things good and bad in both bright and quiet colors, and you will find ninety-nine times out of a hundred he will choose the good thing. Find out what it is he likes about the bad thing, give him a chance and he will choose the good thing rather than the bad. If that were not true there would be no civilization; we would have devoluted back into oysters by this time because we have done so many foolish things and so neglected the laws of nature that it must be some principle in us that seeks the right rather than the wrong, to keep us going at all. As Prof. Shortt said to us yesterday, we have gotten away entirely from the mainsprings of the art and architecture of the past, we have come to a time when neither the civic or the religious is the ideal around which we build our civilization, but the individual, the domestic. Take all these high buildings with which you gentlemen are wrestling in pain and trouble (and it is a serious trouble); what are they for? After all are they not merely the places that we go to (to get away from as soon as we can), that we may have enjoyable surroundings in our home life? That is the sole object, and while we should make them as little obnoxious as possible and keep them as quiet as possible, because they tend to ramp and rave—while we should do that it seems to me that our greatest effort should be put upon the making of the object of all this beautiful, and that is, after all, our homes. (Applause). Therefore, I am talking mainly about house design. I want to say, though, that your president yesterday pointed out what seems to me the only logical materials in which to design the office building, and that is a skeleton of steel clothed with a plastic material of some kind. I cannot conceive, though I admit I have done it myself, that it is proper to clothe a steel frame by putting brick or stone around it or any real building material; it is a lie on the face of it, for it would not stick there and stand unsupported. If we must have that kind of building let us encase it with some plastic material like cement. The engineers are looking after the bones and we are after all only the planners and decorators of it.

The most serious question, as I see it, in designing a house that we have to meet with is, what shall the concrete thing be made of and how shall it be made? Or, perhaps, how shall it be made and what shall it be made of? We will treat, what shall it be made of, first. The material must be moderately cheap. We do not often have palaces to build; we are not working for Gould or J. Pierpont Morgan, but for each other, the average community which we find around us; therefore, the buildings which we build must be cheap. They must not or should not require any great amount of ornament, and I want to point out that the bulk of the ornament that we use is used purely to get surface, and not for the value of the ornament itself. The pressed brick of good old Philadelphia was so horrible that after we once waked up and got past the marble steps and marble lintels we flew to the other extreme and brought in the tortured mud (the terra cotta man), with his substitutes for surface; and we put wriggles

all over it to make up this surface; that is what it amounts to, most of the ornament is just that—wriggles; and we smear that over it for no other reason than that we want surface; I do not think that the lack of ornament enters our mind one time in twenty when we put that kind of stuff on; I do not refer especially to terra cotta, but to all senseless ornament. It is because we are afraid the surface will look flat without the ornament, and that is a mighty poor excuse for putting it on. As I say, texture should be the first consideration, because the bulk of our building will depend for its beauty on texture and on the disposal of its masses and not on ornament. In the first place real ornament that really beautifies the building is too expensive to spread all over it; and, in the second place, you cannot see it if you do so; it becomes merely surface, and here is where fortune favors us, as it so happens that the cheaper and rougher materials naturally have the better textures. I remember when building a house some years ago I arrived on the scaffold just as the bricklayer was starting to build a high kitchen chimney—it was my own house, and I could do as I pleased—and he had there two piles of bricks, very nice bricks; one pile was of quite smooth, beautiful bricks, the other pile was of the roughest bricks that he could get. I said, "What are you going to do with those bricks?" He said, "I am going to use these rough bricks for the lining and the others for the outside." I said, "Reverse it." He nearly fell off the scaffold. I said, "Won't those smooth bricks make a good lining for the flue?" He said, "Yes, very good, excellent lining." I said, "I am quite sure the other bricks will make a much better-looking outside, and that is the part I am interested in, apart from its drawing qualities." So he put the chimney up wrong side out; and when bricks on the inside cost probably \$11 a thousand he had his scaffold down he said to me, "That is the best looking chimney in this town." The and those on the outside \$6.50; and those rough hard bricks are the only kind, in my judgment, of which to build a country house, the roughest ordinary hard brick that you can get. I will stand fight with a client on that before I will utilize anything else, because it is the brick with texture and color, the brick that has the burnt head on it, not to be picked into a pattern necessarily, but put there to have its influence on the texture and color of the building. What is true of brickwork is true also of stonework, with us. When we really want to get expensive stone then we get Avondale stone, which is as white as the driven snow and as uninteresting as anything in God's creation; or we use rubbed or sawed limestone, and if not satisfied with the surface being perfectly smooth, we specify that it shall be drove-tooled; when it is generally planed on a machine. Whenever they get the chance to put the machine on and make grooves they do it; and all the texture and sense of stone is gone out of it. For house building the rough stone, the common flat stone that we use down there makes, in my judgment, the finest wall surface in color and texture and interesting light and shade that we can get. Next comes another material, and, in spite of what our friends who like dark exteriors say, I am extremely fond of it, and that is rough plaster, the roughest sort of dashed work or pebble dash. I think that when we are considering the color of the exterior we must remember, as your president said, shadow, the shadow of the eave—make it big if you want to; the shadow of the trees that overhang it, the shadows of the vines that grow on it. What is there more

charming, more beautiful than the white cottages and thatched or tiled roofs of England, with their beautiful vegetation around them? We may, perhaps, consign white to a greyer climate than ours, but much of the time we could stand white or nearly white here. And this material, it seems to me, is a very valuable one that is much neglected; it gives us mass, it does not chop the surface up, and it gives us a fine contrast with either stone or brick, whether it be white or colored.

Of course we use a great deal of timber work down with us, and I am sorry to say we very seldom use it honestly, most of our timber work being stuck on the outside of the house and not part of the structure. That of course is inexcusable, there is no possible excuse for it, as far as I can see—I do it myself (laughter), but I am ashamed of it and I am trying to stop. It is almost impossible in this country to use it honestly; I doubt if the timbers will stand in our climate long enough when really built in the wall to make it a practical mode of building.

These are, to my mind, the kinds of material that it is worth while to deal with in house-building. Of course we build wooden houses too. We build shingle houses, and they rot out in from a year and a half to ten years; it is not a permanent building material. We have not used tile roofs nearly so much as we might, that is one of the things that I think the architects here and with us should steadily work for, to get some kind of roof that is not flat, stale and unprofitable like slate, or merely momentary like the shingles of to-day. Tiles are just about as hard to get, but as interesting as bricks or anything else in this machine-made age. I will give my secret away—it may be your secret, too—the only tiles I ever put on a building are the seconds, the culls; they are the tiles that are uneven, rough and crooked and of a good color. The average American selected tile is about as good as red slate, but that is all; as far as texture goes it is about the same. It is worth while, it seems to me, to make a fight on some of these materials that we have to use.

Perhaps the most serious problem we are up against is, how to get this material put together so that it may properly be called architecture after it is done. How much of the building that we are doing in this country would we walk out of our way to see in the old country? or would we collect pieces of as we do pieces of the old buildings? That comes back to the proposition of my friend that the architect is not a designer of buildings, but a designer of opportunities and, if we cannot find the people about us who will seize those opportunities and together with us make architecture, the net result will not be architecture; we will have design but not architecture. Here is where I am going to get "reactionary" in trying to go on straight. People say that we are in a condition, and always have been, of evolution, and that we cannot fight against tendencies. But we know how mankind has evolved in the past, it has been in spirals. When they were rebuilding a brick Rome in marble they little thought that Rome was in its decline. Their literature, they thought better than the more rugged and rough literature of former days; their architecture they thought better, more refined and elegant; but just the same Rome was in a decline and not on an ascent; it seems to me that it is worth while for architects especially to see what can be done in stemming the tide or at least in diverting the tide from methods that are suicidal as far as art goes. You must remember that

though the body of architects is a very small one compared with the community it has been a very efficient mover of the community. The difference between the Philadelphia—I speak of Philadelphia because it is my own place—of thirty years ago and of to-day is almost entirely due to the few architects who have worked for better things there. They insisted and insisted again and again in spite of the conservatism of client and builder that material and design should be better, and they have bettered them. Now it is in our hands very largely to influence the men who do our work by continually insisting on honest work just as our friend who spoke here on decorative work, assuring us of their willingness to co-operate with us. You will find that these men, who work with you in making buildings, will do exactly the same thing. They may be more stubborn about it, and they have a harder row to hoe than the decorators, for the decorators are more closely in touch with their own work than the builders are. They have the work more nearly in their hands than we have. The men who erect our buildings are divided into two classes, the contractors, with whom we come in touch, and the men who actually do the work. The contractor has, in a large measure, ceased to be a builder; he is simply a contractor; he gets a number of sub-bids, adds them together, and puts on his commission for profit and superintendence, and finances the job, and, to a certain extent sees that it is carried out, that the people working under him carry it out. But he has comparatively little touch and little sympathy with the actual workmen who carry out the work, and they are the men that we must go after. It is not the contractors who have much to do with the actual building; it is the craftsmen, if you can call them that, who do the work.

Now, it seems a reactionary proposition, and possibly a hopeless one, to fight against the machine. Here we are at the end of the 19th century, the century that brags more of its methods of production than any other one thing; and I say that those methods of production are themselves absolutely immoral and reactionary. And I mean it. I mean that the method of production that considers only the amount of the product and the profit that can be made upon it, is absolutely immoral, and that the products of these methods are essentially inartistic, especially in our decorative friends' materials. I know, for instance, what it is to try to select papers for other people; I know that always or nearly always, when the people get the paper on the wall they think you have buncoed them; they will come into the room and say, "That is not the paper I selected, it was not that color, it was not that design." There is a difference between the design which may be very beautiful and the thing you get upon your walls, wherever it is mechanically made. And that is an essential difference. It is a difference that is bound to exist. I do not care how far you may perfect your methods of production if they are mechanical the result cannot be artistic, because art is, after all, as far as I can see it, only the expression of one's own individuality. Hubbard has said that art is the visible evidence of man's joy in his work. And that is almost a definition, but it is not the real definition, because the art is in the doing of the thing and not in the product of the doing. You cannot, if that be true, get art material or art results without artists. The proof that it is true is that the artist never hoards the things that he makes; his real joy is in the making. The rich people do not possess the art of the country,

they have the crumbs that fall from the artist's table, and that is all that they can get of it. The artists are the fellows that get the fun out of it. Art truly is to the artist. Now we architects are only half artists, because while we guide the hand we are not the hand. It is a pity, but it is true. And yet we have the biggest opportunity in the world, and that is the making of ourselves and the crowd better men at the same time, and it is in our hands to do it. We may be really leaders, but the evidence of leadership is a following. If we have not a following among the people that create the things that we are supposed to create then we are in nowise leaders; but we have the privilege of being leaders and educators of the people, and especially educators of our co-workers in making architecture. And how shall we go about it? Of course I do not want to be too savage against machinery and I do not want to repeat what I said last night, but I will repeat just one thing that came up in conversation with Mr. Langton and some others.

Mr. Langton—I think it was too good to be lost by not giving it to others.

Mr. Price—This machinery question is a vital one and one we cannot ignore—as to where we can draw the line on the machine. I was trying to make a distinction, and I think I can make one; I think you will agree that the place where we can draw the line is this—just so long as a machine is a tool with which a man works it is a benefit no matter how highly it may be developed, but the moment it ceases to be a tool and becomes a mere automatic machine into which material is fed, and out of which the product comes without any volition of the man who is working it then that machine becomes an immoral affair, and the product of it becomes absolutely worthless as far as the art world is concerned. That seems to me to be the place to draw the line. That does not cut out band saws or turning lathes, or other power tools, but it does cut out much of the work we have to put up with; for instance, it cuts out machine carving in all its forms. It is an easy way to make a yard or a yard and a half or a whole piece of so-called ornament, but of what value is such ornament. Now can we get the people we build for and the people we build with, to go with us, and return if it be a return, towards a more simple method of construction? I think we can. I think that there is one way we can do it if no other, but it would be a drastic method. That would be to cut off all the ornaments, make the thing absolutely simple and plain with only the essential features in it. Then at least there would be no bad ornaments in it. I think we can go a step further, and instead of cluttering up the inside or the outside of our houses with numberless moldings and brackets and "the Lord knows what, of round and square, stuck here, there and everywhere," without any special meaning except that our ancestors or forefathers did it in marble or some other material, for I am afraid that is the reason we put most of those things in—we can eliminate most of these things and substitute for them extreme honest simplicity in construction, and a little bit of good carving, for we still have the carvers left to us and some of the carvers and decorators are really artists and artisans. I would rather have on my wall a patch a foot square of real decoration interesting enough to go and look at twice than to have the room covered with decoration that has no interest except as to design. That seems to me a most practical line of elimination; cut the quantity of it down to the quick if need

be to get the quality a little where we want it. We can do that, and the people will go with us, for they are just as sick of the uninteresting wall papers and truck that their houses are cluttered up with as we are. I have had no difficulty in getting people to allow me to simplify their houses for them. The tendency to ornament comes from the architect rather than from the client, almost every time. Of course there are exceptions and people want a lot of gaudy ornamentation and display; and I think, in these cases, we had better give it to them, I think that is possibly the best way to cure them. It is a little rough on us, but I think we had better suffer if we can make architecture possible in the doing of it.

I have not talked to you about methods of design. I have not talked to you about what moldings you should put here, there or the other place, I think that would be rather inconsistent since I have been advising you to cut them nearly all out. But what I have been trying to do is to point out certain lines along which we shall design; that we shall in the first place surround the client with a shell that shall be appropriate to its site and its use, that we shall simplify it so that we shall get in the main honest construction and honest ornament so far as we use ornament at all. I think you will readily agree with me as to that question of ornament, when you consider, for instance, the main building of your Toronto University and look at the carving on the inside of it (as I did yesterday with great pleasure), where you can walk along from step to step and find the ornament interesting and worth looking at. That was not the architect's fault altogether. When your president asked me to see it he explained to me very carefully that the architect brought out a real craftsman from Germany or some other place and put him to work there, and he put in those interesting spots. The architect can't do that himself.

The President—I told Mr. Price that the architect was entitled to the credit of bringing him out.

Mr. Price—Yes, you did; but the fact remains that it was the craftsman that did the work. The architect gave him, no doubt, an idea of what he wanted, but like all these things that are worth doing or having, they must be designed in the doing, and not in the lay-out of the doing. You cannot design carving on paper; you can only design carving with a gouge and a mallet. You cannot design wrought iron in any place in the world except on the anvil with a hammer. You can make a suggestion for wrought iron or for carving. You can show the general design or character of it, but you cannot draw it until after it is cut or hammered, because otherwise it is not carving or wrought iron at all. We must recollect that our position is the one that I have pointed out, a designer of opportunities; and what we must do to make architecture a possibility is to go to these craftsmen and ask them, if it be turning back, to turn back; and I think we will get something.

Possibly you are not up against the same difficulties that we are, but this is characteristic of what we have to contend with. Take your carpenter, who is your highest class of craftsman because he does the most varied work, and he will plane and scrape and sand paper the sill of a window and will then proceed to get up on it and stand on his heels to pull nails out above. I do not know whether that happens here or not, but it happens with us. And if the carpenter

does not do it the decorator will do it for him.

The President—It is usually the plumber who does things in our buildings.

Mr. Price—The plumber generally does not get as good a chance at it as the decorator; and if he does not do it the man that puts up the curtains and window shades will do it. They are bound to have it in some way. Is it not a distressing situation, that our highest class of craftsmen either do not know or do not care about much except Saturday night's part of their work. It is a pitiable commentary on our civilization that the bulk of our people care for the wage and not the work, because the only thing that is worth doing, in my mind, in the world is work. I am quite sure that the same man, when he gets through working at the job he has to do, if he does not work too long and is not so tired as to kill his ambition, turns to other work. I am quite sure that what Prof. Shortt said about himself is true of most of us, that he gets his recreation by turning from the work he is engaged in most of the time and making furniture, carving and doing such work and he thinks his best thoughts when he is doing so. That our craftsmen should have abandoned that position and accepted the 19th century ideal, that the way to get development is to make the greatest number of things with the least possible effort, or in the least possible time so that he may have time to devote to something else, seems to me suicidal. There is something in work besides wages and a good deal better than wages; and I think we can prove it by simplifying the work, by teaching him that he must do this thing in this way because it is the right way to do it and because it is handsomer when done the right way, as well as more moral and that it will be reflected in his character. But when our work is nearly all sham, as it is in one way or another, how can we expect a man working at that sham work to develop into an honest, straight thinker? He can't do it, and the consequence is he walks on our window sill. I do not want to talk longer about this matter; I would very much rather have a good lively scrap in which we all could join, so with your permission I will stop. (Applause).

DISCUSSION.

The President: I think Mr. Price is a little of an extremist in following the rule of leaving his audience when they still want to hear him. But we cannot ask him to speak too much. I should therefore like to hear the discussion which he proposes we should have.

Mr. Baker: I have much pleasure in moving a hearty vote of thanks to Mr. Price for his very agreeable remarks which I am sure we all appreciated; and I think we all, without exception, agree with him. I feel a little at sea in attempting to say anything as I presume I am expected to do. For I see my name on the paper as leader of a discussion on his address; but if I am able to get around in a circle and back to the place I started from I shall be glad. I am a little helped in starting out by being right in my conjecture as to the line of talk that Mr. Price would give us. I did not expect somehow that he would take up design in the abstract and talk to us about how to put the different parts of the whole design together and that sort of thing; I expected more that he would do just as he has done and give us the moral aspect of it. He has told us that we have got to be teachers. Incidentally I think we have to be learners also, because where we get a client who is a cultured man of understanding and learning and refinement we then find that he is quite capable of leading us in some cases; and we should allow ourselves to be led I take it, as long as we are not led away from practical lines. In thinking this over I came across some lines which were peculiarly

apt as being spoken by a man of culture and deep thinking and learning, I refer to Swift; he said:

"I have often wished that I had clear for
life £600 a year;
A handsome house to lodge a friend,
A river at the garden's end,
A terraced walk, and half a rood of land,
saved out to plant a wood."

There is a client after all our hearts. The wish for £600 a year was a modest one. He realized that about that sum would be necessary to live in a handsome house, and wants the means to suit the mansion; that is all. A dignified conception, worth considering by people whose means are fixed but whose ideas of the sort of house they would like are expansive. Our poet's handsome house is what? Not a very great house; not an elaborate mansion full of carving and display; he describes it as a house in which to lodge a friend. He does not want his friend to see magnificent ornaments, but to be comfortable and to have pleasure in spending a time with him. Then he thinks of the surroundings of the house, and, as Prof. Shortt told us yesterday, he makes it fit in with nature. He has the terraced walk and ground for the wood, for he thinks of recreation and wants to get it, as in England, by having a cover for partridges and that sort of thing. That is a man we should like to deal with. Mr. Price would have a happy time with him. We should not need to lead him; he could go with us and we should be favored in going with him. When we get a client who has ideas at all that is what we should do. I recently came across some other lines which are peculiarly applicable to the man who wants the display and magnificence that Mr. Price tells us we have got to give him in order to teach him—it is a sort of homeopathic treatment that perhaps in the end will be effective. Pope had evidently been listening to a long oration of the man who had built the mansion in question and, as he was expected to say nothing, he said:

"It is very fine,
But where do you sleep, and where do you dine?
It is clear, from what you are telling,
It is a house but not a dwelling."

What we have got to provide, I think, for our clients is not exactly what they want most but what they need most, and, if they are vulgar people themselves, that will be what will help them to bring their children up, probably without knowing it, in surroundings of refinement and culture. Mr. Price did not touch on the value of travel in this respect, but I think that that is the key note of the whole thing. He said that during the last ten or fifteen years the architects of Philadelphia have developed on splendid lines and had improved very much, but I think, if we go to the bottom of the matter, we shall find that, while it is the architects that are the cause of the development, it is the fact that architects have had the opportunity of travel and study amongst the best works of the old lands; that they have come back with ideas broadened and filled out, and have seen the reasons for things that are so hard to see in theory. That I think is the secret of the wonderful advancement that has been made in the art of architecture in the United States, as well as in sculpture and the sister arts. I have seen it written somewhere that during the Continental wars, at the end of the 18th century, or the beginning of the 19th century there was a stationary period in the architecture of England; that there was no advancement but rather deterioration. That was attributed to the fact that continental travel was entirely cut off and the younger generations were not able to go abroad and see the good work that was there. And I think that anything that we, as an Association, can do to send our students abroad, as our cousins on the other side of the line have been doing, by offering scholarships for that purpose, will foster in the surest way the rapid development of design. (Applause).

Mr. Wickson: It gives me much pleasure to second that motion. I am afraid that any remarks that I

make will be dreadfully prosaic. I simply wanted to ask Mr. Price a very practical question. We have in our neighborhood some very fine bricks manufactured of a dark color, a very beautiful, dark, varying color, which many of our clients wish to put into their buildings. Following the line that you have suggested, that we try to get texture in our brick work and that the bricks should not be too smooth and that sort of thing, we would rather lay bricks in honest mortar; but from my own personal experience I find that these dark bricks which are so much admired, and which are good serviceable bricks as well as good looking bricks; if laid in ordinary mortar do not give a satisfactory effect. It seems almost impossible to get anything like a clear joint—I do not mean a small joint but one which is not ragged—are we justified in coloring the mortar to make it look well?

Mr. Price: I should judge you were justified in doing anything you pleased about coloring the mortar, although it might be possible that you would lose the sense of surface, which you would readily do. I should say that if you must color the mortar, it would be well to do it in such a manner as not to disguise the joints; simply as a question of preserving the texture of the brickwork. Of course much of that effect can be accomplished by slightly raking the joint so that you get a natural shadow on the joint itself, thereby modifying its color.

Mr. Reid (Ontario Society of Artists): I should like to ask Mr. Price if he would color plaster on the outside of a building, since color in the plaster seems to be a way to arrive at an effect.

Mr. Price: I can see no reason at all why we should not color a plastic material of that kind. We color them with us in various ways; some that we call natural and some artificial. The natural way is to color them by using sands of various colors; and that is the best way, because that color is an integral part of the mortar itself and if chipped off or broken can be patched again without disadvantage. Whereas the using of ground colors has this disadvantage that patching is almost impossible. I can see no reason why you should not color mortar just as much as any other surface, any other plastic material on which you wish to get color and texture. I should think however that that color should always be mixed in, not applied, because the tendency of applied color is to destroy the texture.

Mr. Simpson: There was one thing that struck me in Mr. Price's paper. I cannot remember in detail all that interested me, I hope to read the paper and refer to it often in our Proceedings; I should like to have it indelibly impressed on my mind. There is one thing that I should like to draw attention to now. When Mr. Price was speaking of building according to what our owner's requirements are, it occurred to me how architects allow themselves sometimes to be influenced by the owner's whims that are not really requirements and are not in accordance with good taste. I have noticed that architects have sometimes been afraid of their clients and afraid to speak their minds out. We must distinguish between this and the sympathy with their ideas of which Mr. Price speaks. I am sure we all feel very much indebted to Mr. Price and will be greatly benefited by his remarks.

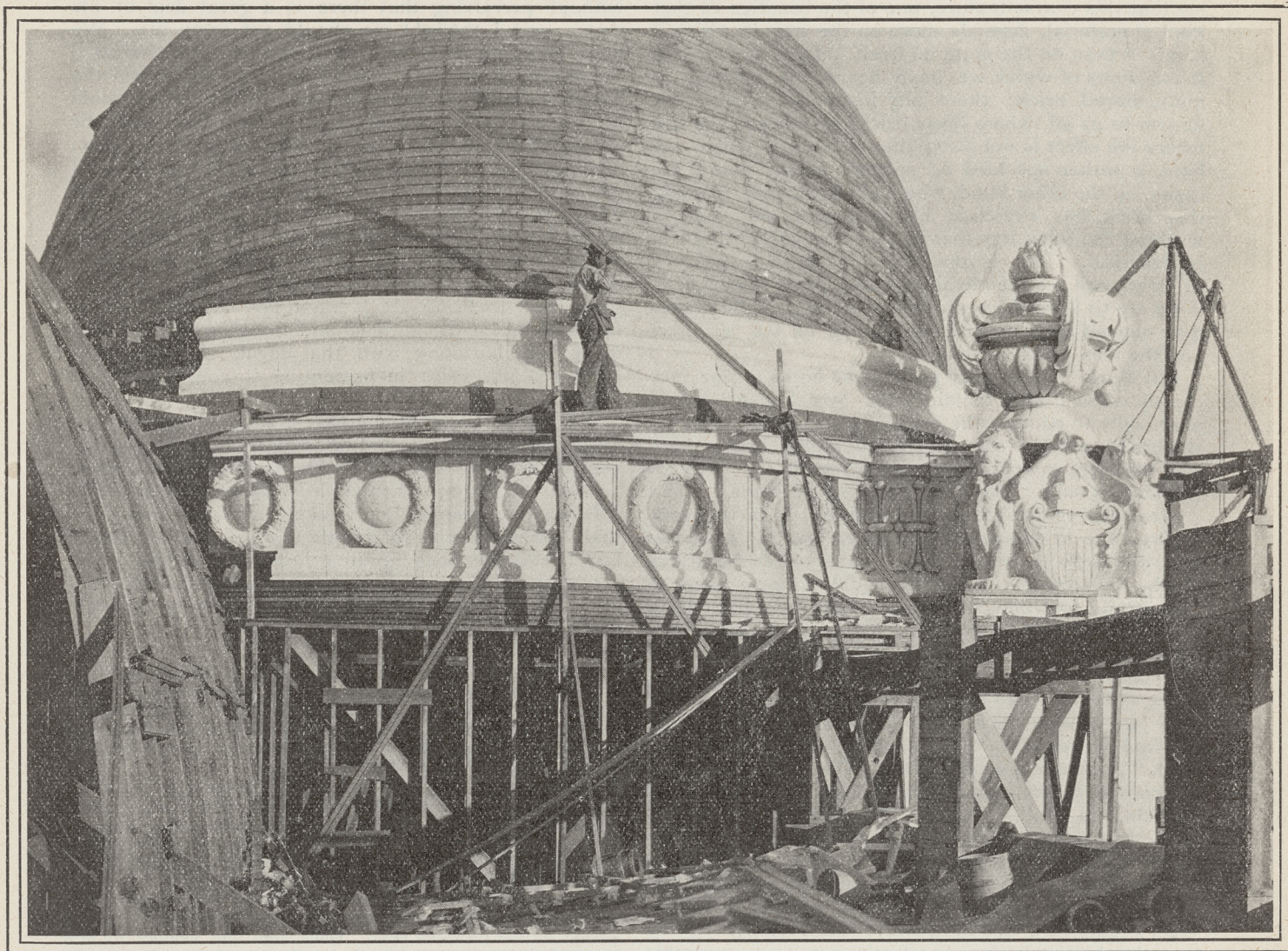
Mr. J. P. Hynes, (Architectural Eighteen Club): I should like to express my appreciation of Mr. Price's paper or lecture; I feel that it is the most complete thing I ever ran across. In speaking of the texture of materials: Philadelphia has been somewhat of an experimental ground I think for that and I would like to hear what Mr. Price would have to say in regard to the way in which, in the Museum of Natural History of Pennsylvania, they have experimented not only with the color of brick but the size of the joints and mortar. Many of us have seen it, some have not. I considered it one of the most interesting pieces of brick work I had ever seen. But I doubt if it is an experiment I should try.

Mr. Price: There is no criticism to make of the brick

work there except on one point and that is that, to carry out their original scheme of a long brick, (I never heard why they could not or did not get it) they bound two bricks together with a fine joint between them. That is of course an essential dishonesty, and a great drawback from a building that is, apart from that, very simply constructed and beautiful. That peculiarity does not shew up in the photograph very well; for one reason because it is only a fragment. You have there a pediment with an entrance door, which is practically but a porch to the main building, with a flat dome back of it, and it naturally looks severe; but the texture of the building is perfectly charming. The bricks are a dark and rather heavy brick, and the mortar is a cement gravel mortar, with three-quarters of an inch thickness of joint, and laid up

Mr. Price: Ordinary brick, about $8\frac{1}{2}$ inches.

Mr. Hynes: I notice that where they used moulded brick it did not seem to have as satisfactory a result as where they had used other brick in a pattern; a kind of a frieze, with a row of headers under, which is all that marks the change from the wall to the frieze. In other places there is a row of projecting headers which are bullnosed and (particularly as the lines of the brick work are not very good with this heavy joint in it) it seems inappropriate to mould the brick; to put a moulding on something in which a virtue is made of roughness. While the variegation of brick work was kept on the surface it was very satisfactory indeed. I thought one lesson might be drawn from that building and that is to leave moulded brick alone. It was, however, only where the moulded brick projected past the



CORNER DOME OF VARIED INDUSTRIES BUILDING, LOUISIANA PURCHASE EXPOSITION, ST. LOUIS.

slightly back of the face; that is, it is not a raked joint exactly but it is pushed in as well as they could. They have added a large amount of color work to the building through by introduction of mosaics in brick and terra cotta and marble and stone; anything at all that would give them the color effect. There is no sham about it as far as I know, unless you choose to call the color of the marble a sham. The marble they use is treated with iron, which rusts it and makes permanent stains. It may be questionable whether that is proper or not, but we should be all very glad if our marble in conjunction with brick work were so unfortunate as to have a nail driven in just above it and became rusted naturally. They have only gone one better than that; and it is probably a color that the marble would get with extreme age.

Mr. Mortimer: What is the size of the brick?

surface that it did not seem to be satisfactory. Where they kept it in the surface, as headers, it seemed to be very effectual as decoration. I do not know whether Mr. Price would agree with that or not.

Mr. Price: I should agree with it very largely. Moulded brick of course is very dangerous material, because the essence of the building is that it shall be a long line and the essence of the brick is that it is a short chunk which tends if made too much of to destroy the long line. Much of the best mouldings of that work are not moulding at all but projections which give a shadow and do not pretend to be mouldings. Besides the moulding is smoother than the rest of the brick and gives a difference in texture.

Mr. Helliwell: In common with those who have spoken I would like to express my appreciation of the paper we have just listened to and at the same time

congratulate the Committee, who had charge of the arrangement of our programme, because there has been such a variety of subject and topic. We have had the structural part very well brought before us, and this afternoon we have had this other feature. In connection with the address we have just listened to, I should like to say how fully I fall in with the idea of the importance of house architecture, in this way, that, while comparatively few architects have the privilege of dealing with monumental buildings or even with very large and expensive commercial buildings, there are no architects who have not the opportunity of dealing with the domestic subject. Another point too is this:—when Mr. Price was speaking of the part that the artistic had in the production of architecture, and in connection more particularly with the use of material in its common state, such as brick of the coarse stamp; it struck me that this coarse texture, one of the beauties of that kind of material, depends more on the way in which it is put in than on the material itself. Take for instance these bricks of which we have heard, the mottled or multicolored brick; there are instances in our city, known to us all, where these bricks have been used and where the effect is not altogether pleasant; where we have a rather speckled or spotted effect; there are cases, on the other hand, where the bricklayer, in using this brick, has exercised his judgment and taste in working the brick together in such a way that the effect is beautiful. This is one of the instances in which I think we can see the advantage and great importance, if we are to have the best kind of results, of the craftsman himself entering into the feeling of the architect and the idea which is sought.

Mr. Burke: That very point came home to me very closely when I was building my own house; I had practically to educate the bricklayers. I went down to the brick yard and saw a pile of culled bricks there that the brick manufacturer said came off the arch of the kiln. I said, "Those are the bricks I want." I had a great deal of trouble getting sufficient to do the work because the bricklayers were rather wanting to throw out the roughest bricks; they wanted to get the bricks all the one color. Whereas I did educate them to understand that they should just take the pile as it was; not to deliberately put a black brick against a yellow brick, but exercise a little judgment. They took the run of the kiln. With regard to the chimney Mr. Price spoke of I had the very same experience; I had only just enough brick left to finish my chimney; and the hod carrier said, "We have not any bricks." I said, "Yes, there is a pile there." "Oh, he said those are all knobby bricks; great big knobs on them; they wouldn't do at all." I said, "Take them up." And I think I have one of the prettiest chimneys in Toronto in consequence. Regarding the question of design in connection with the steel framed buildings I think Mr. Price struck the right note there, that the cover of the steel should be a plastic cover. Then comes in the question how to make our plastic covering agreeable to the eye. We all know of course that Portland cement has not an agreeable color and it is practically impossible to make it agreeable. It seems to me then that we should get a plastic material with an agreeable color; and what more agreeable color could you think of than tiles; carefully made tiles or tiles of suitable color? Should not this, then, be the future of the steel framed building covered with plastic material?

The President: We cannot close this discussion up in the absence of Mr. Price who has been called out of the room to speak to some one and we will have to converse among ourselves as he is unfortunately speaking to a friend outside. The principal difficulty about molded brick is always that a molded brick is out of scale and it is difficult to get any scale for a building with molded brick because the horizontal size is too small. I was very interested in a point that has been spoken of by other speakers; in the way Mr. Price proposes that we should look at the point of view of our uncultivated client. He likes something and it is a bad thing, but what he likes is not necessarily its badness;

and what we have got to turn our minds to is to find out what is the good thing in it that he likes and we can appropriate. The client who admired the building on 49th Street evidently was a Philadelphian who had had enough of the old fashioned Philadelphian work—two windows and a door, with marble lintels, downstairs, and three windows, with marble lintels, in upstairs; a pressed brick front; and what pleased him was the life he saw in the inverted arches on 49 Street. It is quite possible to flet the idea that he wants some life; to avoid the monotony which he wished to avoid, without perpetuating bad art. If a client likes bright color it is possible to give him bright color without giving him crude color. I was glad when I heard Mr. Price was coming to speak to us because it is impossible to see any representation of Philadelphia work or hear anything about Philadelphia without perceiving that there is a great deal of life there; and I thought we should get some life. We have certainly done so. Mr. Price has demonstrated that although the pen is mightier than the sword the tongue is mightier than the pen. I think if we could have him a little more amongst us we should soon be strongly infected by the spirit which is in the air now, and nowhere, I think, more than in Philadelphia. I am glad to see such a meeting as this, it could not have occurred fifteen or even ten years ago. The public are getting interested in art. If we could have a little more of Mr. Price—we shall have a little more of him when we read the Proceedings. We shall do a great deal to bring about what Mr. Hughes said at lunch about having an ideal and bringing our environment into harmony with that ideal. I have much pleasure, Mr. Price, in presenting to you the vote of thanks.

Mr. Price: I should just like to acknowledge the extreme pleasure I have had in being here with you, especially in being able to be with you through the entire session. I doubt whether it is possible to speak intelligently to people that you do not know, any more than to build houses for people that you do not know; but if there has been anything in the few rambling remarks that I have given that have been good for you I feel quite confident that you yourselves have brought it out by your sympathy.

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A SUBSCRIBER :—What in your opinion is the best way to secure $1\frac{1}{4}$ inch bolts in the solid rock for a heavy foundation?

ANS.:—One of the best methods of securing an iron bolt in rock is to split the end of the bolt and insert a wedge which will expand the bolt on either side when it is driven into the hole. This might be supplemented by tamping into the space around the bolt Portland cement, after the bolt is driven home.

A young country contractor writes:—(1.) "I am figuring on a plan got up by a city architect, and it is the first I ever met with. The specification reads: Lay a rough floor under first floor to be laid folding hollow back with splayed heading joints and blind nailed. I understand "blind nailed" but I do not understand "folding hollow back." (2.)—I am going to build a new dry kiln, and as I have but little experience, you would much oblige if you could enlighten me as to the best system to adopt. My power is steam, and size of kiln is 20x40 or thereabouts?

ANSWER:—(1) The meaning of the specification to which your letter refers is by no means clear. We think, however, that the architect meant that there should be two floors laid over joists—the first a rough one, the next a dressed and matched one, and that the "butt" or "head" joints should be "bevelled" or "splayed" and lap over each other, and the matched floor blind nailed. This is all we can make out of it. Perhaps the Specification has not been properly read. (2.) With regard to the dry kiln, you can heat it with coils of steam piping, either under the floor or against the side walls. We would suggest a two-pipe system, so that condensed water would return to boilers by a separate set of pipes. The best way would be to consult a good heating plumber or heating engineer, or communicate with some of the manufacturers of dry kilns, as, for instance, the McEachern Heating & Ventilating Co., of Galt, Ont., the Standard Dry Kiln Co., Indianapolis, and the American Blower Co., Detroit. Catalogues of these companies would probably give you useful information.

From "Small Contractor": I have a business in a western city, which consists chiefly of jobbing and repair work, and I wish to keep the cost of each item. Which is the simplest method of doing this? The men I employ use time sheets, but are, as a rule, very poor scholars:—

ANS.—Evidently you desire to keep the cost of each trade in each item of repair. Unless you have plenty of time and plenty of patience, it is better to make as few separate items as possible. Workmen seldom realize the necessity of keeping strict account of time and material, and generally resent having anything to do with what they call "watch-work." Unless there is in each, or any, job some one or more items which stand out quite distinct and separate from other work, no really useful purpose is served by microscopic dissection. The simplest method that can be recommended (this is, of course, without knowing any of the querist's special requirements) is to have a general order book; each job is entered, being provided with a number. Official order slips (printed ones soon save the cost of printing) bearing the number should be issued to the leading tradesmen on the job, and it should be his business to see that each man on the job books his time to that number. To take care of distinct sub-items in jobs, a sub-order book should be provided—one for each trade if the magnitude of the business requires it—and, as an illustration, each job set out by carpenter or joiner might be the subject of a separate sub-order. When the job is complete, the workman holding the order slip should return it to the office, bearing on the back an account of materials used, or, where several trades are engaged, each leading man in his trade might be required to render the account of materials on the back (or face) of his time sheet. Use of scaffolding, unless on a job of some extent, is best charged up as a percentage on the cost of the job, or upon the cost of time, the latter being the preferable though not the most usual method. If you have not a copy of "The Canadian Contractor's Hand Book and Estimator," you had better get one as it contains some useful advice regarding builders' book-keeping, and much other useful matter.

From a "Layman": I am a constant reader of your paper and have found in it many things that have repaid me tenfold more than the cost of subscription. I wish to make some changes in my house next summer, such as putting wood ceilings in main hall, parlor and dining room, and I would like to know if such changes would be desirable. I wish to show beams and panels in the ceilings. These rooms are finished in polished oak, and are wainscoted in same material. The stairs are all polished, and a tier of art tiles, from the top panel of the wainscot?

ANS.:—There is nothing which gives an impression of richness and durability to an apartment in greater degree than natural finished wood ceilings. They are not, of course, appropriate to every room unless the house is built at all events upon a scale of magnificence not often realized in this country. Unfortunately this method of finishing the ceiling is very expensive and beyond the means of ordinary house owners. Attempts have been made from time to time to obtain the effect of wood ceilings by various imitations in paper, but without other success than to make the whole thing ridiculous and vulgar. Veneers are, of course, more or less imitative, and are sometimes intended to convey an impression of wealth not sustained by their surroundings. Wood veneer in natural finish is an exceedingly handsome material. It may be used upon mural surfaces without any attempt to convey anything more than its own beauty to the eye of the beholder. A just recognition of this fact has increased the popularity of wood veneers for walls and ceilings among many who are most exacting in their rejection of everything that is in the least simulative in character. There can be no doubt that this distinction is well drawn. It is one thing to imitate wooden panels by graining or the use of grained papers, but essentially different to use the wood itself as an ornament, leaving it only to the beholder to determine whether the wood is but the fraction of an inch or a foot in thickness. A new veneer now upon the market consists of a thin piece of natural wood backed up by paper and cemented to the wall, first prepared with a thin layer of muslin. This process permits the use of great varieties of wood without corresponding expense. It is finished, of course, in such manner as to heighten the natural grain. This material is adjusted almost as easily as wall paper, and a much smaller degree of skill is necessary to make smooth joints than in inlaid work. If you write Elliott & Son Co., 79 King Street West, Toronto, they will send you prices of parquet work, which would answer your purpose nicely.

From "Bricklayer":—I am a new hand at contracting and would like to get a few pointers as to the proper method of estimating for work, and form of tender to send in?

ANS.:—For manner of estimating look into your Canadian Contractors' Hand-Book and Estimator, if you have one, and you will find on page 110, and in the appendix, rules for getting the number of bricks, etc., etc., and the amount of mortar you will require for any given work. See that you get the prices all right and exact. Then to the total cost add a percentage—say from 10 to 20 per cent.—to cover profit, book-keeping and contingencies, etc., etc. The tender may be written in the following lines: 36 Broad Street, Winnipeg, Man., (date), to Mr. Blank. I hereby tender for the carrying out of the whole of the brickwork in connection with the erection of _____, including the supply of materials, labor, scaffolding, and water, for the sum of \$ _____; and I undertake to maintain the work in good condition for a period of three months after completion. Payment is to be made monthly to the amount of 75 per cent. on the value of the work done, 10 per cent. on completion, and the remaining 15 per cent. to be paid at the end of three months, provided that the work is satisfactory. Yours truly, W. M. Bricklayer." If the labor only is to be tendered for, the description should read as follows:—"The whole of the labor in connection with the brickwork of _____ you to provide materials, scaffolding, mortar and water."

From a "Journeyman": I am employed in a city and have a lot of "jobbing" to do in carpenter work, and make use of a wheel to go to and fro to work, and would like to make some sort of a box or chest to "hang" on the wheel carry tools in. Is there anything of the kind?

ANS.—We have seen a kind of leather case used for the purpose, but suppose that is expensive. A rough sketch of a box is shown at Fig. 1, which is made of white pine sides, $\frac{3}{8}$ inch thick, with oak ends hollowed out to fit the tubing of the

frame. The box may be about $2\frac{1}{2}$ inches clear inside. It can be strapped to the saddle post tube and its weight is about 10 pounds loaded with a small kit, including a panel saw. It will save considerable car fare. The tools ought to be wedged in tight with waste or old rags to keep them from rattling. We would recommend that the bottom be made flat.

From "Builder": I am putting a hip roof in a building and must put in a purlin about half-way up the rafter and mitre same on corners. How is this done properly?

ANS.—A good and simple way, and one that can be applied to a roof of any angle, is as follows:—Let A, B, C, D, Fig. 2, be the purlin, E, the common rafter drawn to correct pitch, F, G, H, the plan of the angle of the building, and G, I, the plan of the hip. From the angles, A, D and C, of the purlin draw lines, A, J, D, K, C, L, parallel to F, G; make K, N, equal to the depth of purlin and K, M, equal to the thickness of same; draw N, O, and M, P, parallel to F, G. From the points where the lines from A and C, cut the plan of the hip, draw J, P, and L, Q, square from F, G; join Q, K, and K, P. The angle of R, K, Q, will be the level for the down or side cut, and the angle M, P, K, will be the level for the cut across the edge. In setting out, it is

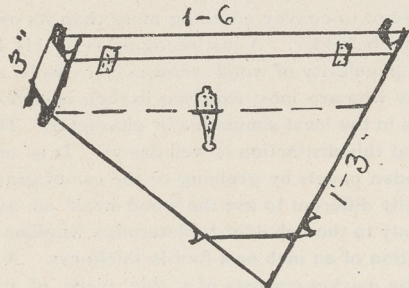


FIG. 1.—BICYCLE TOOL BOX.

advisable to mark the purlin as near full size as possible, to insure the bevels being accurate.

From "Apprentice": Please show how a circle can be divided into any number of equal parts?

ANS.—There are a number of methods by which this may be done, approximately: we submit one herewith. Draw the diameter A, B, Fig. 3, and divide it into as many parts as it is desired to divide the circle, say, for example, nine. From the two extremities of the diameters as centres, with the diameter as a radius, describe arcs, intersecting as shown at C. Through the second point of division in the line of diameter and the intersection of the arcs draw a straight line, as shown by C, D, producing it until it cuts the circle at the point E. The distance

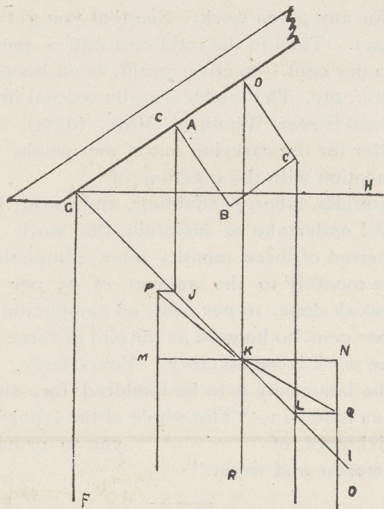


FIG. 2.—SETTING OUT PURLIN FOR HIP-ROOF.

then from the end of the diameter B, to the point in the circumference E, will be one ninth of the circle, as you can demonstrate by applying dividers to the sketch.

From "Old Builder": Will you kindly describe the substance known as Mineral Wool and what it is used for, and oblige,

ANS.—In appearance Mineral Wool or "silicate cotton", as it

is sometimes called, is a vitreous substance in the form of very fine fibres. These interlace in every direction and form an almost innumerable number of minute air-cells. Mineral wool is not unlike glass, save that its fibres are soft, pliant, and comparatively inelastic. One of the most important properties of this product is that of heat insulation, and to accomplish this purpose, as well as through the fact that it is incombustible, its extensive use in building work has come about. It is highly advantageous for filling all the interior spaces in wood building construction such as between studs, floor beams, etc. It has been the experience that this not only makes the house warmer in winter and

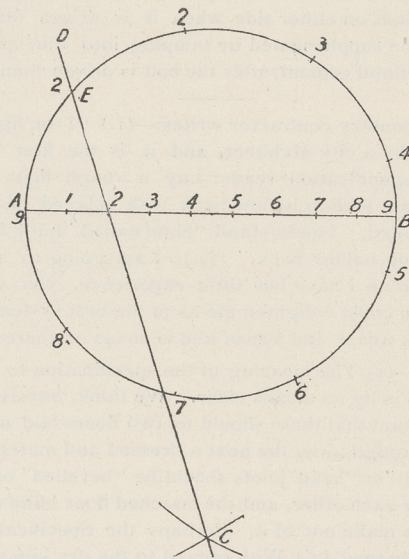


FIG. 3.—DIVIDING A CIRCLE.

cooler in summer, but, in the event of a fire, prevents the internal construction of the house from burning; in other words, the fire can be communicated only over the outside of the woodwork where it can be readily seen and dealt with.

From "R. D. McD":—In setting out mitres for all angles, which is the easiest and quickest method?

ANS.—The easiest, best, and quickest, in fact, the only way of getting at these mitres is to bisect the angles. In the accom-

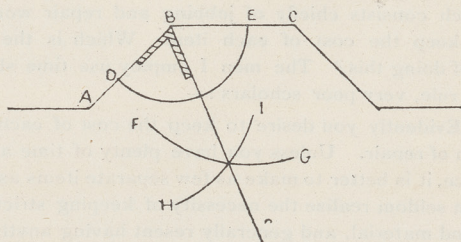


FIG. 4.—SETTING OUT MITRES.

any diagram Fig. 4., let A B C be the angle; then, with B as centre and with any radius describe the arc D E; then with three points as centres and any radius greater than half the distance between them, describe the arcs F G, and H I. A line drawn from the intersection of these arcs to the apex of the angle, B, bisects—that is to say, cuts the angle into two equal parts, and is therefore the bevel required.

RUST-PROOF PAINT.—Of the strongest basic pigments, red lead, says Engineering, stands first, because those pigments completely saponify the oil acids of linseed oil, and likewise absorb almost all the glycerine that is eliminated by the saponification process. The paint that is formed by this pigment is weather-resisting and waterproof, and to a great extent not affected by ammoniacal fumes. No driers are necessary with this mixture of oil and pigment, but only so much pigment should be used as will combine with all the oil and not leave an excess of that fluid. The product is a tenacious, pliable, adhesive, inert paint, which is not affected by moisture, oxygen, or ordinary noxious gases. When complete saponification has occurred, the paint is a hard, cement-like body—it is used as a cement by plumbers for joining pipe connections; therefore it should be spread as a paint before complete saponification has occurred.

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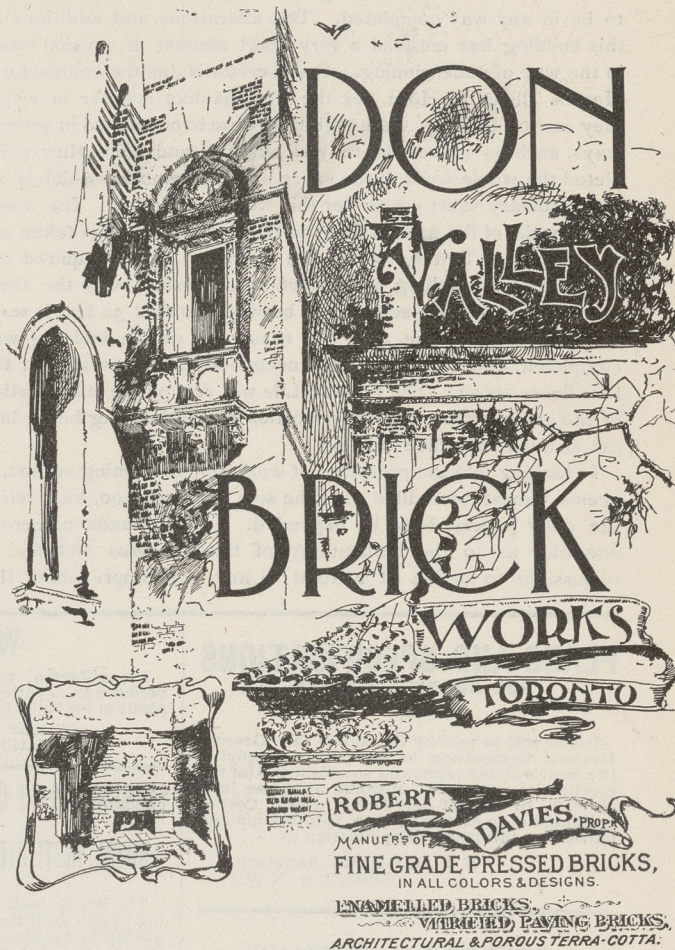
NOTES.

The Bridgeport Wood Finishing Company's calendar for 1903 shows illustrations of the laboratory factories and offices at New Millford, Conn.; mills at Branchville, Ct., and offices in New York, Philadelphia and Chicago.

The next convention of the National Association of Builders will be held in the city of St. Louis during the year of the World's Fair. Preference was expressed that the convention be held in the month of February of that year, although the exact date was left to the discretion of the Executive Committee.

Boston, it is alleged, is indulging in the elevator girl. It is time to call a halt, says the Baltimore Builders' Journal. We

are taking too many risks. We do not question the willingness nor the intelligence of the girls who may run elevators, but we should have neither elevator girls or boys. We should have men, and good robust men at that. In case of accident or fire a great deal depends upon the courage and strength of the person in charge of the elevator.



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NORTHWEST LETTER.

WINNIPEG, Feb. 12, 1903.

In giving you a resume of the work in course of construction, in my letter some months ago, I stated that I would give a description of the finished work in this letter.

Of all the large work that was commenced last year such as the Strathcona Block, St. Mary's Academy, St. Stephen's Church, etc., the Canada Life Building is the only one that can be said to be in any way completed. The alterations and additions to this building has entailed a very great amount of unusual work in the way of underpinning. Great credit is due the contractors, Messrs. Illsley & Horn, for the workmanlike manner in which they carried this out. Although they were handicapped in several ways, such as strikes, scarcity of material and labor, they completed the whole work in the space of seven months, which is an extraordinary short period for this western country. The whole of the walls of the ground floor on the street fronts was taken out and rebuilt in Bedford stone, an operation which required the most careful handling and which was finished with the thermometer registering somewhere between 20 and 30 below zero. This work was done after the remainder of the building was completed, and which therefore necessitated the carrying of the four floors above. The Canada Life will occupy the main portion of the ground floor, the upper portion of the building being laid out as a modern office building.

In looking into the prospects of work for the coming season, it seems almost incredible that the sum of \$4,000,000, as given in the daily papers, is to be expended. I have made numerous enquiries as to the authenticity of these figures and find it impossible to arrive at a total in any way approaching this

amount. If, as it is reported, this amount of work is to be proceeded with this year it means that there will be a deadlock in all branches of the work before the season ends. A famine in both material and labor will be the result. During the past year, with the small amount of work done, compared with the figures given, there was a paucity in the supply of all kinds of material and to obtain labor of any description was most difficult. This was most noticeable in the demand for Portland cement and building was stopped in numerous instances on account of the scarcity of this material. Oak is another commodity that cannot be had at the present moment except in very limited dimensions. To remedy the conditions of the supply market immediate steps should be taken by contractors and others to accelerate the shipping of supplies from outside.

In order to be able to successfully cope with larger work, a number of the most prominent contractors of this city have formed themselves into a supply construction company. This company with a membership of twenty-five, more or less, will include members of all trades and the most prominent ones, generally speaking, in each case. The forming of a company of this description is, I think a very doubtful proposition, and whether Winnipeg will benefit by it is very much a question. It will no doubt be a monopoly to a great extent of the building trades and the successful working of such a scheme as this is a matter of conjecture.

In looking forward to the large work, contractors are reserving themselves from tendering on smaller work, and it is now a difficult matter to obtain tenders on such buildings. Work that has been tendered on shows a great increase in the cost of building compared with last year and all branches of the

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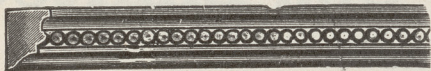
\$100.00 will be paid by the Moose Jaw General Hospital Corporation to any person supplying the most suitable plans and specifications for the erection of a General Hospital at Moose Jaw, N.W.T., by FIRST OF APRIL, next. Cost of building not to exceed \$8000.00. Information and particulars furnished on application to

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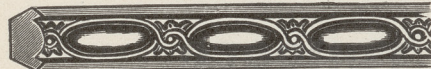
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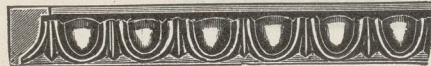
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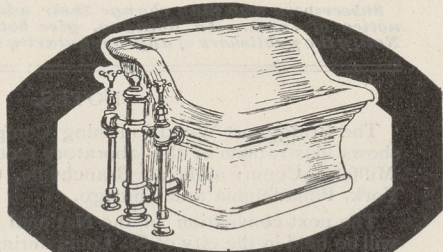
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work were then extremely high. It is rather hard as yet, the contractors find, to determine the prices of either material or labor and on account of this enough has to be allowed, and in figuring they must allow on the right side.

Of work that has been mentioned as probable to start this spring the Union Bank, the Bank of British North America and the Canadian Pacific Railway station are among the largest. The Union Bank is to be a ten storey building with steel construction and fire proof throughout, the plans of which are now being prepared by Messrs. Darling, Pearson & Over. The Bank of British North America will be much smaller, being, as I understand, only three to four storeys in height. The plans of this are now being prepared by Mr. Andrew T. Taylor, F.R.I.B.A., Montreal. Several large warehouses are to be erected this year, the plans of which are now in the hands of local architects. Some of these warehouses will cost in the vicinity of \$50,000.

A competition has recently been held for the Winnipeg Carnegie Public Library, and although I do not wish to expatiate on this matter I would like to place before you some of the facts relating to the conditions. The cost of the building, including architects' fees and all permanent fittings, was fixed at \$75,000. Three premiums were granted: \$300 (which was to be included in architect's fee if work was proceeded with), \$200, \$100. A special committee of the Council of the City of Winnipeg has awarded the premiums. Eight sets of drawings were sent in, all of them being in the opinion of the Council most creditable. The drawings are not yet on exhibition and the only ones I have seen are those of the successful competitor, Mr. H. S. Griffiths, who kindly allowed me to see his design. He regretted that he was not in a position to allow his design to be published until after he had received tenders, which close on the 24th inst., for if the total cost of the work exceeds the amount specified in the conditions, the work is placed in the hands of the next successful competitor. In plan, Mr. Griffiths has, I think, been very successful and the working of the library should be most satisfactory. In his elevations, however, he has I think been a little too

severe and a little more elaboration would have improved the elevations much. He has promised to permit his designs to be published in the March issue of your paper and I will then forward them on to you. It is rather regrettable regarding the criticism and awarding of the designs, that it was conducted under such adverse conditions. It is a well-known fact that the "man on the street" knows practically nothing about the true principles of architecture, and for a body of such men to undertake the criticism and placing of the competitive designs in their order of merit makes the result of the whole work a deplorable fiasco. It seems lamentable that the commissions for such public buildings should be so often granted in this hopeless manner. Of course it may be said that this form of procedure is often adopted and a precedent thereby instituted, but strenuous efforts on the part of architects should be made whereby the criticism of such drawings would be placed in the hands of some competent arbiter. The method employed in this case was as follows—Each plan was submitted with its non-de-plume, which, by the way, an alderman stated was a dissimulation, as he understood the names were known to some of the members of the Council. After several meetings of the Council was held and serious consideration given to the various drawings, they announced that to them the drawings all looked so much alike that they were incapable of determining on any special set. A meeting of the whole city Council was therefore convened to act in conjunction with them and to again discuss the relative merits of each design. The result of this proceeding was that the Council voted on all the drawings and the five most favored were again handed over to be dealt with by the special committee, who accordingly finally determined on the three best.

The mistake made I think, was that when the special Committee found that they were incapable of making a choice between the drawings they did not call in some experienced, capable and thoroughly unbiased authority and thereby obtain an equitable and satisfactory decision.

I notice in the daily press that an offer has been made by Mr. Carnegie to Toronto of a large sum for the erection of a similar building to the above. If this is accepted and a competition held a more satisfactory arrangement than the above, it is to be hoped, will be arrived at.

I intended forwarding to you photograph of the Canada Life Building, but have been unable to get this in time for this issue.

W. PERCY OVER.

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PUBLICATIONS.

A new work entitled "Letters and Lettering," by Frank Chouteau Brown, has been published by the Bates & Guild Co., Boston, Mass., price, \$2. It comprises 200 pages bound in cloth and contains a treatise on lettering, with two hundred examples.

"Common-Sense Handrailings and How to Build them," is the comprehensive title of a new book for the practical man from the pen of Mr. Fred. T. Hodgson, author of numerous well-known practical books for the building trades. The book contains three distinct treatises, each complete in itself and is liberally illustrated with working diagrams explanatory of the text. Price, \$1.00. The publishers are Messrs. F. J. Drake & Co., Chicago.

"Wall Paper and Wall Coverings," a practical handbook for Decorators, Paperhangers, Architects, Builders and House-owners," by Arthur Seymour Jennings, editor of the London "Decorator," etc. One large 8vo. vol.; cloth. Price, \$2. New York: Wm. T. Comstock.

The book which is liberally illustrated, treats of the selection of wall papers, varieties and characteristics of papers, tools and methods for hanging, etc.

The Amherstburg Quarry Co. have sent out a calendar showing views of their quarries and shipping facilities.

BUSINESS NOTES.

To meet the demand for a varnish which will give a smooth, hard finish and enhance the beauty of the surface upon which it is applied and for general purposes, the Canada Paint Company have introduced the universal "Sun" Varnish. It is said to have been made from selected clear bright gum and every tank thoroughly matured and tested before being put into tins.

The Don Valley Brick Works are about to install a plant for the manufacture of porous terra cotta fireproofing material. Messrs. Bowman and Miller representing the company recently had an interview with the members of the Toronto Chapter of Architects to learn what sizes of blocks would best meet the requirements for partitions and arches. The consensus of opinion was that for partitions the sizes most in demand would be 3 and 5 inches and for arches, 8, 10 and 12 inches, with skewbacks to suit the various sizes of beams.

The attention of Canadian architects is called to the announcement appearing in the advertisement columns of this number regarding the R.I.R.A. examinations. The Canadian architects who succeeded in passing the examinations last year were Messrs T. McLaren, Arnott Woodroffe and Chas. Hopson.

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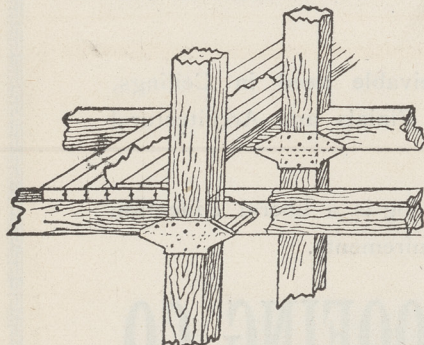
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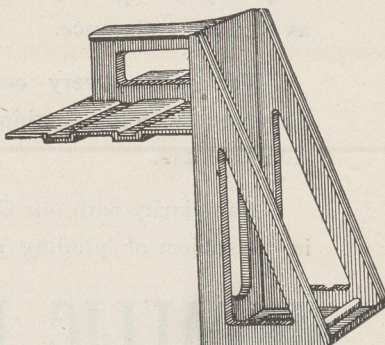
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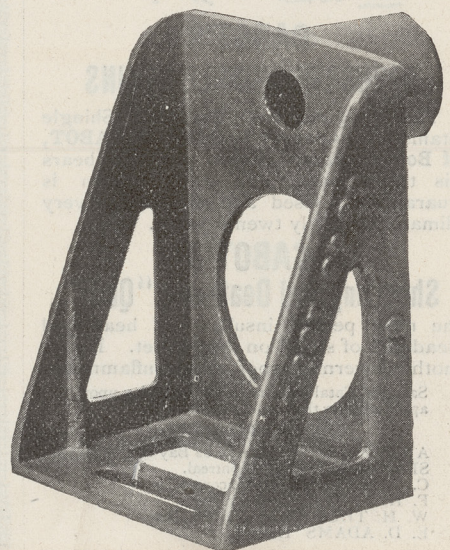
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ROMAN STONE.

The latest evidence of the coming of the Cement Age in building construction is the erection of plants for the manufacture of building stone. Canada's foremost position in this movement is shown by the organization of a company in Toronto known as the Roman Stone Co. who have built and equipped a model plant for the manufacture of Roman Stone—a product whose appearance so closely resembles natural stone as to deceive even the trained eye upon close inspection and whose physical properties are claimed to surpass most of our common building stone.

Coincident with the enormous advance made in the manufacture of Portland cement is the progress made in the art of its proper manufacture. Architects and builders have always known that best results in building are obtained only from men who are experts in their profession. Cement construction is no exception to this rule, although its apparent ease and simplicity of manipulation has led many to believe otherwise. In this way not a few failures have been made in cement construction but it is argued that those who condemn cement stone for this reason

should realize that they are basing their condemnation upon results made possible by conditions for which they alone are responsible.

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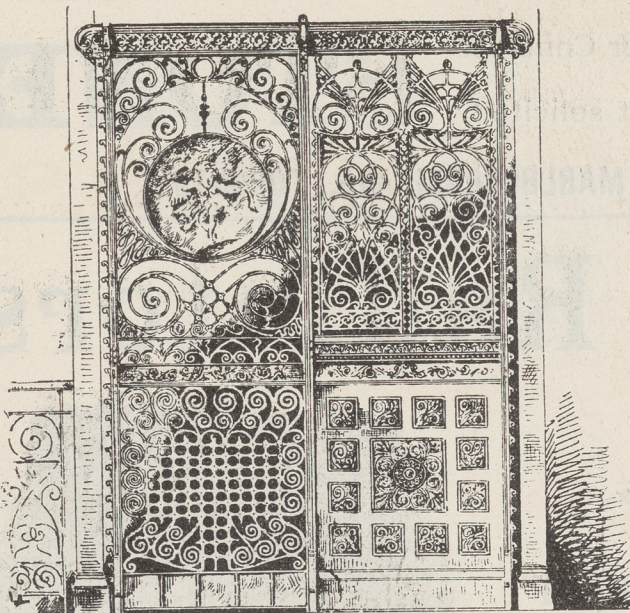
The officers of the company are: H. M. Pellatt, President; H. Blain, Vice-President, and G. P. Ames Managing Director. The manufacturing is under the direction of Chas. D. Watson, as Chief Engineer.

We expect to be able to give a detailed description of the company's plant and product in subsequent issue.

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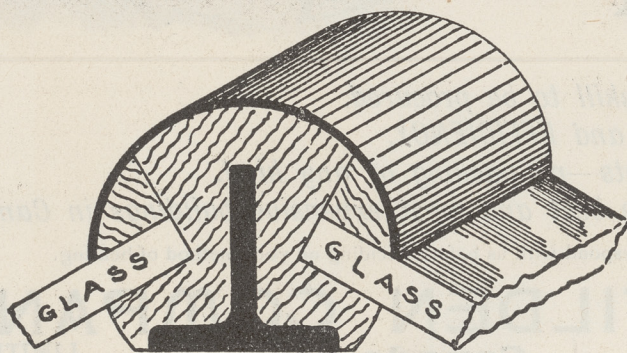


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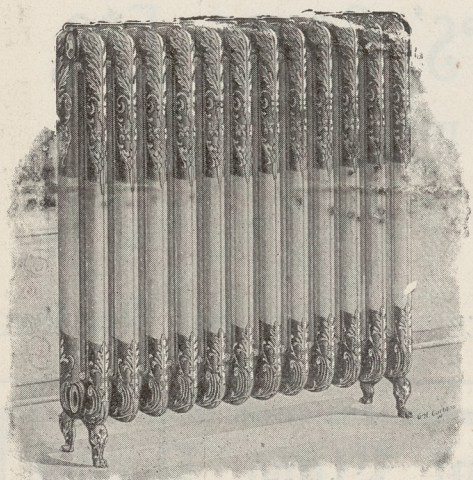
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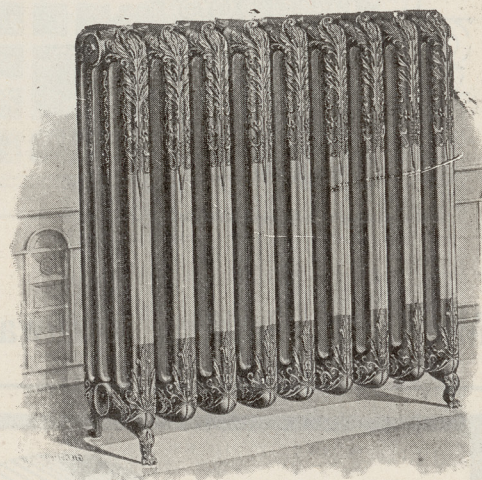
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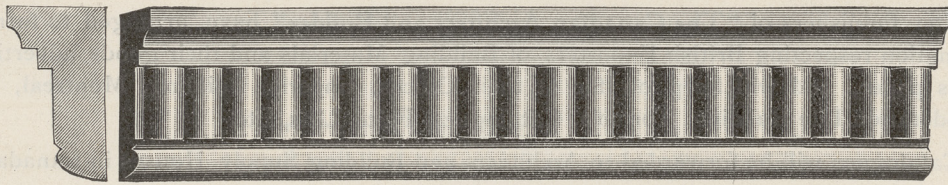
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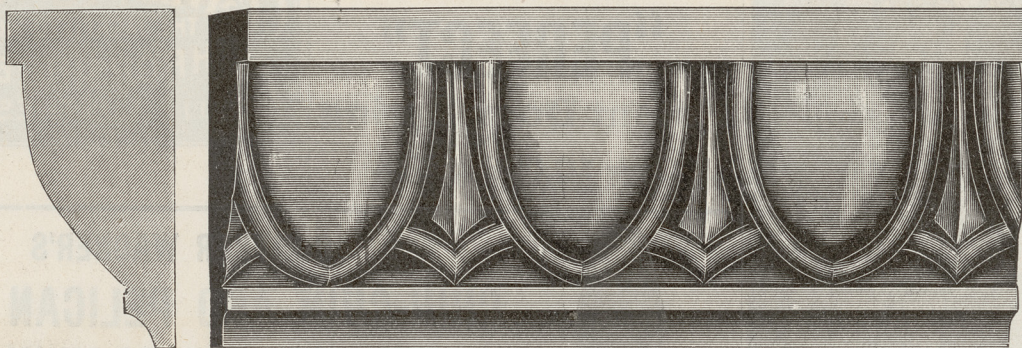
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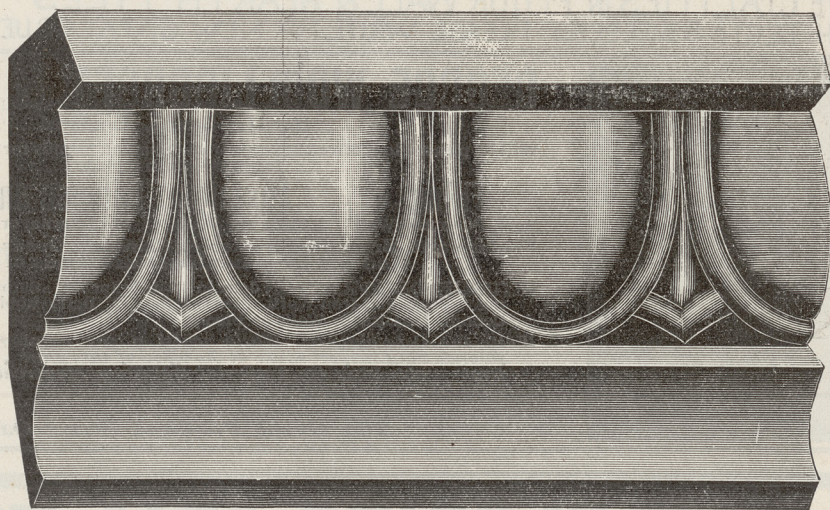
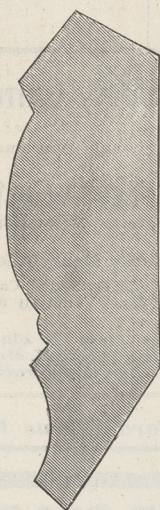
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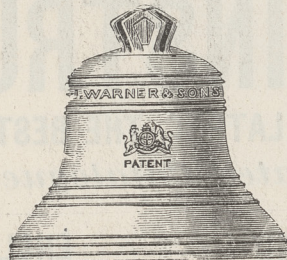
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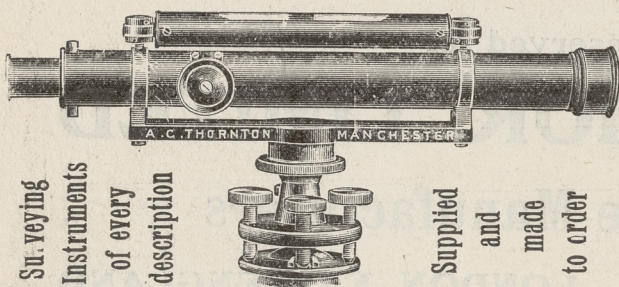
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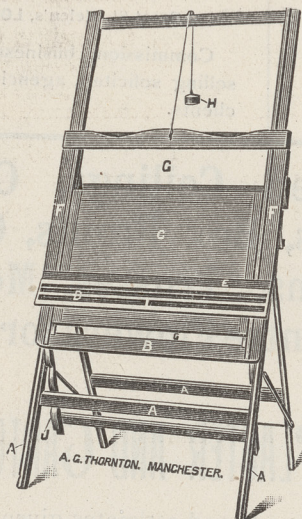
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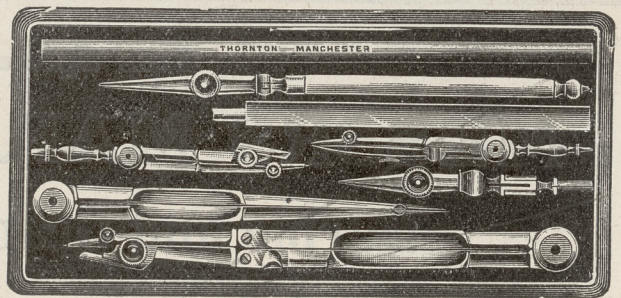
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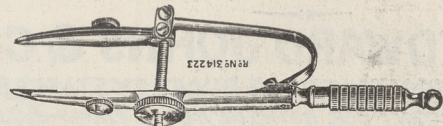


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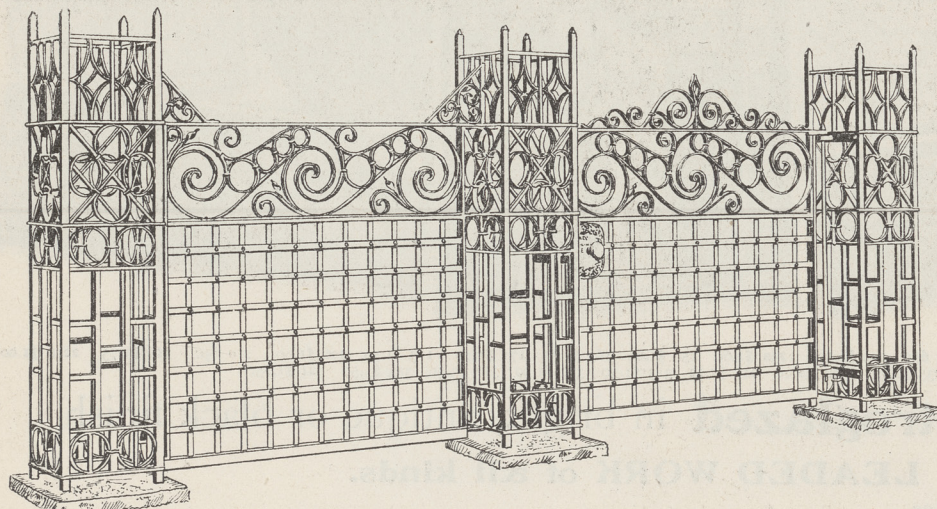
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